

Flight

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE AERO CLUB OF THE UNITED KINGDOM.

No. 44. Vol. I.]

OCTOBER 30TH, 1909.

[Registered at the G.P.O.
as a Newspaper.]

[Weekly. Price 1d.
Post Free, 1½d.]

THE MEETINGS AND THE AFTERMATH.

THE first two flying meetings in Britain have passed into aeronautical history, but we are still in the midst of the aftermath of them. From the point of view of flying, it is perhaps to be questioned if either or both combined have done any direct good towards increasing interest in the science and sport of aviation. In the first place, the attitude of the public has been to dwell not so much on the flights that have been made as on those that were not made. There has been a disposition, as it were, of counting the number of sheds and the number of aeroplanes in them, the number of pilots on the ground, and to consider what a very small proportion of machines and pilots have flown at all during the period of these meetings, than to total up the duration of the flights. The fact that aerial navigation with a heavier machine than the viewless element it negotiates has been achieved to a greater extent than has ever been manifested before, has been overlooked entirely, probably because on the occasion of Latham's triumphant performance at Blackpool comparatively a mere handful of onlookers were on the course, and even among those some were so utterly unable to understand that the space into which they looked was a moving power of constantly varying force and speed, that they thought there was nothing worth looking at in the great flight, merely because when head to wind the machine did not come past them at a fast speed, and its rate of travel was not of a uniform regularity. Of course, anybody who begins to understand the elements of practical aviation will be aware that these very conditions and the successful combating of them have revealed that aeroplaning is many stages further advanced to-day than we had dared to hope. Various writers have made the mistake of assuming that the monoplane rode out a constant wind of from 45 to 48 miles an hour. That might be considerable, yet there would be nothing amazing in such an achievement. The whole point of advancement revealed was owing to the fact that the wind would be blowing one instant at 48 miles an hour and the next would suddenly subside to 12 miles an hour, so that the machine was not facing a steady and dependable opposition, but was being subjected to a series of buffetings and of sudden failures of opposing force; while to have made a journey either head-on to a constant wind, or with the constant wind in the rear, at such a speed would not have been difficult by comparison with allowing the gale to attack the monoplane from every point of the compass. Some cheerful commentators, who appear neither to have

visited Doncaster or Blackpool, have been observing that Blackpool is the more favoured course because Doncaster suffers from being sheltered by trees. One imagines that the Doncaster folk will rightly resent any such disparagement of the situation of their course from a flying point of view. The weather records during the period when both meetings were running concurrently certainly reveal that Doncaster was a more favoured course than was Blackpool, because the winds that blew off the sea were not steady as those commentators stated, but were gales such as have been already referred to. Paulhan came next in order of merit to Latham, for he flew on a biplane in a 24 miles an hour wind. Happily, Londoners are having an opportunity this week-end of seeing him conveniently near home at Brooklands.

At the moment we are, perhaps, concerned more with the aftermath than with the performances at these meetings. Those who foretold that this is quite one of the most unsuitable seasons of the year for organising flying meetings in Britain have been amply justified, as have those who prophesied that the meetings would be merely an advertisement for the competency of foreign machines and foreign pilots, and an exposure of the incompetency of British machines and British pilots. With the financial aspects of the situation we do not propose to deal. That constitutes a chapter with which it is impossible to have overmuch sympathy.

Perhaps the most important fact in view of the unfortunate controversy that these meetings have occasioned, is that that controversy has been created purely over the point of competition for awards, whereas if we look at the history of both meetings, there has not been a single competition in the proper sense of the term at either one. Thus the event has proven that there was absolutely no excuse for the promoters of the Doncaster Meeting not to have taken the advice of the Aero Club when they found that it was impractical to postpone the date of the Meeting, and have simply had exhibition flights such as Paulhan is giving and will give at Brooklands. Even when M. Roger Sommer challenged Mr. Cody as an independent act, the newly-made British citizen made excuses for not taking up the gauntlet, one of which was that his machine was not suitable for flying on a course where it would have to be turning fairly often, while as for the one about the engine not running well, naturally he would not be expected to compete until his engine *was* working satisfactorily. Be these things as may be, we have the fact that there has been

no reason why there should have been even nominal competitions at Doncaster.

The controversy, however, gave to certain individuals the very opportunity they sought for the creation of discord. Knowing how easy it is to gain sympathy on the colour of being harshly dealt with or inadequately represented, they pitched a tale nominally apropos of the Doncaster Meeting, but actually not in connection with it at all, for we hold the local authorities at Doncaster to be entirely innocent in the matter. Anybody who knows the historical facts of aviation at home and abroad will be aware that statements most unwarrantably opposed to the facts of the case have been supplied to the Press, and have in all good faith been published by them. Unhappily, the public appreciates very little of what are the needs of this new movement of aviation, and it does not understand the necessity there is for a unity of purpose between and for the general support of the recognised bodies, the Aeronautical Society of Great Britain representing science, the Aero Club of the United Kingdom standing for the sporting and social phases, and the Aerial League of the British Empire representing patriotism and propaganda, all three bodies working in active agreement, and all three constituted on quite a democratic and thoroughly representative basis. For example, anybody can belong to the Aeronautical Society for a yearly subscription of one guinea. Anybody who does not wish to become a member of the Aero Club of the United Kingdom direct can join either the Aero Club League or any local organisation about the country concerned with the sport of aviation. And if that body elects to become associated with the pioneer organisation of the kind it can be represented on the General Council, which is to control the sport, have independent funds at its disposal, and will elect the delegates to the Federation Internationale Aeronautique. Hence, by association, every provincial body secures for its members the right to take part in any competition at home or abroad under International rules, and in addition has representation based on the only fair system, that of representatives on the General Committee in accordance with its membership, so that it is not a case of the Aero Club's securing a position to itself, but on the contrary of its having voluntarily and at the earliest possible moment asked the other aeronautical bodies concerned with sport to collaborate with it on terms of the most advantageous sort to themselves. When it is borne in mind that the average age of the bodies concerned with sport, other than the three bodies named, is something less than three months, no rational person could have expected the thing to have been done more quickly. As a fact, three-fifths of the local bodies concerned with the sport of aeronautics have come into force apropos of the Doncaster and of the Blackpool meetings. Lastly, as touching the representative nature of the leading bodies, we find that anybody can become a member of the Aerial League of the British Empire without election, and merely on payment of the subscription. If that does

not constitute a democratic and a representative situation, we would like to know what does.

In conclusion, we have found that among many unfortunate things that have occurred this week, one very fortunate and very notable proof has been afforded the public that the working agreement between those three democratically constituted bodies is no nominal one, but a very real and vital one, as has been proven by the joint letter published throughout the Press of the country on behalf of the Aeronautical Society, the Aero Club, and the Aerial League. We give the text of that letter on another page. We cannot, in the present issue, record the happenings at the meeting which was the occasion for that letter to be written and jointly issued because that meeting does not take place until after we go to press. We shall, however, hope to treat the matter adequately in our next issue, for we feel that at this period in the history of aeronautics light is needed, and needed badly; hence it is our duty to present the facts and to analyse statements to the best of our ability. From the resolutions that were announced to be put at the Mansion House meeting, it is plain that the object is merely to wrench from the Aero Club and the associated bodies (which can be increased at any time by the accession of any Club concerned with the sport of aviation throughout the country whether it is at the present disinclined to do so or not) the authority which they now jointly exercise over the sport of aviation as concerning Britons at home and abroad, and foreigners when competing in this country. The statement that the Aero Club assumes the right to control the whole of British aviation and to say who was or who was not to call meetings at the Mansion House or anywhere else, is absolutely and utterly unwarranted by the facts. The calling of meetings is not the purpose of the Aero Club, as has been shown quite clearly in the official letter published broadcast, while the scheme that has been before the provincial bodies for some time proves beyond all doubt that the Aero Club has been only too anxious not to constitute itself a dictator, but to ask that every provincial society shall share that honourable responsibility which, in virtue of its being by many years the oldest established body in this country for the promotion or practice of aviation with heavier-than-air and with lighter-than-air machines, it is entitled to, and is anxious not to keep it exclusively any longer than is absolutely necessary. Until local bodies began to spring into being it was not possible to formulate a scheme of association, and even to-day many of those local bodies are expressing the opinion that they are not sufficiently numerous as to their membership to be considered representative even of their district. Even that, however, does not concern the Aero Club, which, by its scheme, is offering association with every advantage of co-operation and representation to the smallest and to the largest, to the oldest and to the newest of the organisations in Britain concerned with the sport of aviation.

⊗ ⊗

⊗ ⊗

"Ecole Supérieure d'Aeronautique."

SUCH is the title of the Aviation College which is now taking definite shape in Paris, founded by several well-known men. At present the headquarters are at 30, Rue Falguière, and the lecturers appointed include M. Painlevé, who will take as his subject the mechanics of aviation; Commandant Renard, aeronautics; M.

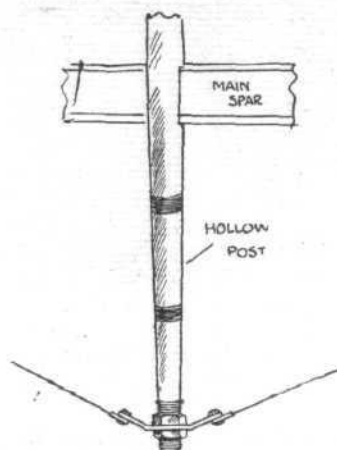
Mesnager, resistance of matter; M. Guillaume, instruments and dimensions; Commandant Voyer, military aeronautics; Colonel Espitalier, construction. Seven other lecturers are to be appointed to lecture on various subjects, including "Aerial Law." At the conclusion of the year's tuition the pupil will take part in various experiments, and if he passes the examinations will be granted a certificate as a "Bachelor of Aviation."

THE ANTOINETTE MONOPLANE.

(Concluded from page 662.)

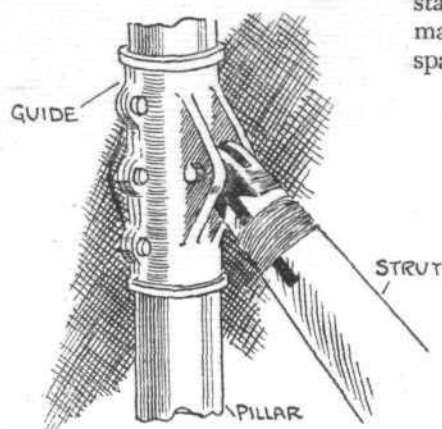
Thick Wings and their Buoyancy.

THE thickness of the wings already mentioned is a result of adopting a system of construction designed to secure a maximum of strength with a minimum of weight, but it may be remarked *en passant* that the volumetric capacity which this thickness confers on the wings showed itself to be of more than incidental advantage



"Flight" Copyright.

The Antoinette Flyer.—Sketch showing how the main spars in the wings are trussed by hollow posts and diagonal wires.

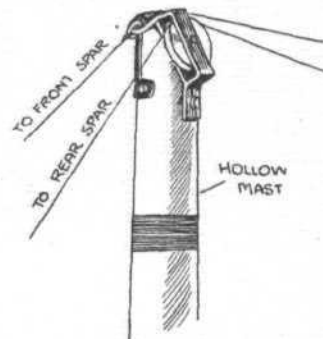


"Flight" Copyright.

The Antoinette Flyer.—Sketch showing the attachment of the axle-strut to the sliding-guide on the vertical pillar. The strut is of hollow wood, and has a steel end-piece.

kept exceptionally taut by the large number of ribs that go to make up the wing framework.

The outstretched wings form a pair of cantilevers, of which the main transverse spars are the principal members. Each spar is constructed on the lattice-girder principle, and tapers in depth towards the extremity. At its inner end it is mounted in a substantial bracket, which is attached to the body of the machine. This bracket, in the case of the rear pair of spars, is pivoted, as shown in an accompanying sketch, so that it can rock bodily when the wings are warped.



"Flight" Copyright.

The Antoinette Flyer.—Sketch showing how the stay-wires for the wings are attached to the mast.

In addition to these main transverse spars there are other transverse members unattached to the body of the machine, but serving, nevertheless, to give strength to the wing framework. Across these spars pass the curved main ribs, which are spaced at intervals of about 18 ins.; they are also built up lattice-girder fashion. Between the main ribs light open ribs, constructed with-

in the matter of buoyancy when Mr. Latham so unfortunately had to alight on the sea in his cross-Channel flights.

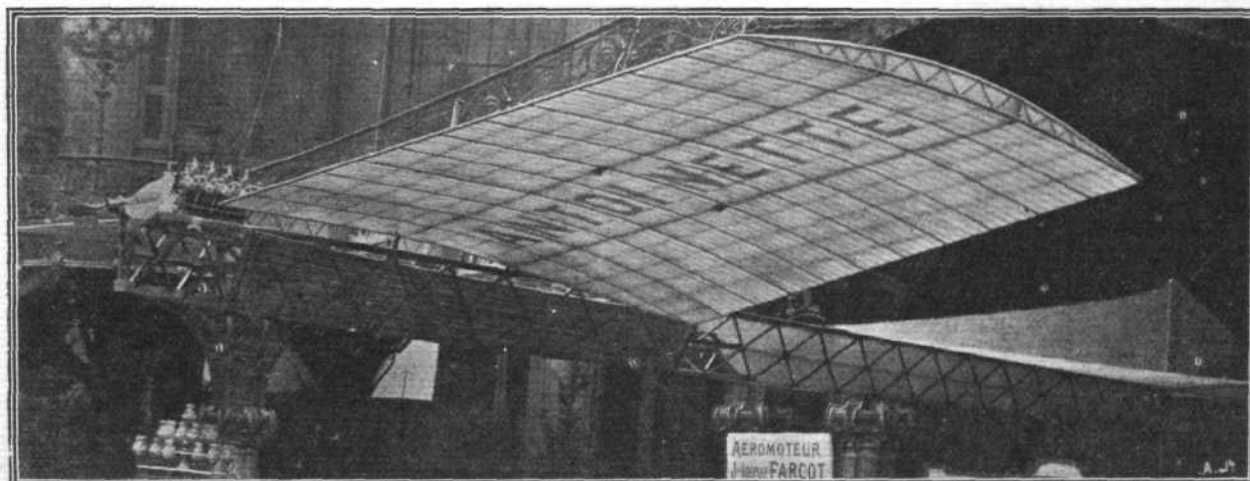
Of the other special features, it is necessary only to mention the boat-like body and the distance of the tail behind the main planes, which distinctly seems to be relatively greater than on other machines.

Wing Construction.

The wings are built up upon two transverse main spars, neither of which, however, forms the edge of the wing, as is so commonly the case in the decks of biplanes. Both the leading and trailing edges of the Antoinette wings are sharp, and their upper and lower surfaces (made of Michelin rubber-proofed fabric) are

out the lattice bracing, are provided for the additional support of the surface fabric. Near the body of the machine these latter members have a spacing of only about 2 ins., but elsewhere their distance apart is twice as much. As the result of this very carefully thought-out system of construction, the manufacturers claim that their wing framework for wings of 15 to 25 square metres in surface can be produced as light as 1 kilog. per square metre, not including the fabric.

In addition to their mounting on the body of the machine, to which reference has already been made, the wings are further supported by wires, which radiate from a central wooden mast projecting above the body. These wires are attached to the main transverse spars about the centre of their length, and each spar is itself



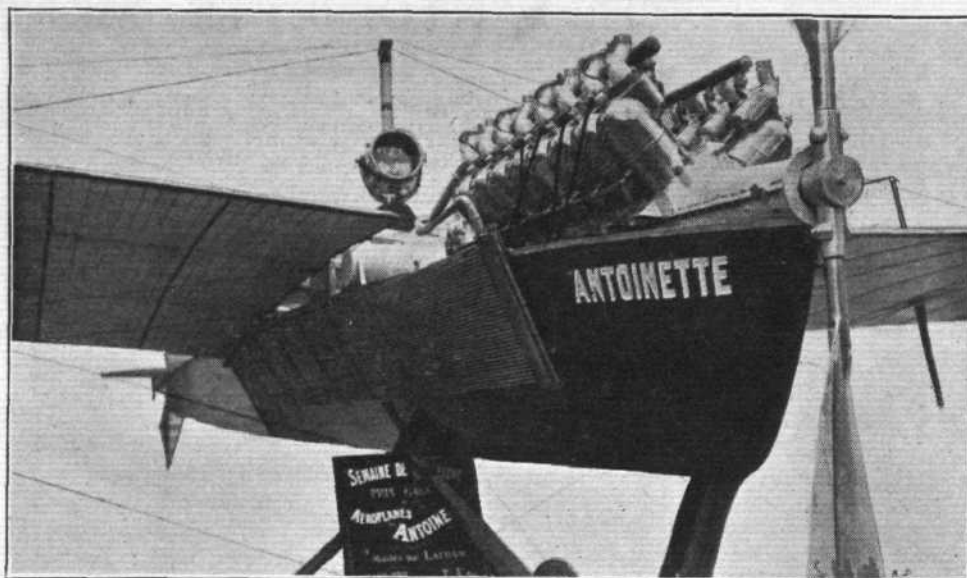
THE ANTOINETTE FLYER.—In the above illustration of an early Antoinette monoplane the arrangement of the spars and ribs and the framework of the wing can be seen through the surface material. The above view also shows the lattice-girder main frame, which in the latest machines is covered in.

independently trussed by a vertical post and diagonal wires. The posts used for this purpose are, like the main-mast, of hollow construction, and each is one continuous member from top to bottom. It is placed a little to the side of the main-spar which it trusses, being notched to receive that member.

This arrangement avoids the necessity of dividing the post at the centre. Each end of the post is fitted with a steel ferrule, on the outside of which is a screw thread. A suitable attachment for the stay-wires is provided by a light steel plate threaded over the ferrule, and clamped between two nuts.

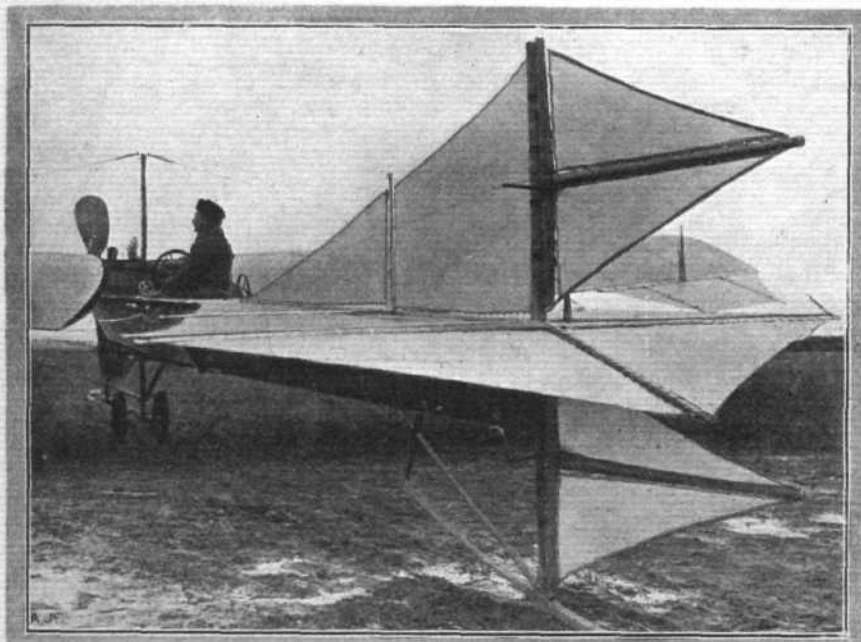
The Body and Chassis.

The body of the machine consists of a hollow V-section lattice girder, the fore part of which is encased with a veneer of cedar,



"Flight" Copyright Photo.

THE ANTOINETTE FLYER.—View of the latest model, showing the cedar hull. The framework under the surface is illustrated in another view, showing an earlier type.



THE ANTOINETTE FLYER.—In the above view of the tail the triangular horizontal plane which forms the elevator is shown depressed for descent, while the two triangular rudders are shown set over for turning to the right.

and pointed like the bows of a boat. Further aft the cedar gives place to a covering of rubber-proofed fabric, and this material is also carried over the top side of the frame, thus forming a kind of deck. An open cockpit is provided for the accommodation of the pilot's seat.

The machine is supported on the ground by a pair of small pneumatic shod wheels, attached to an axle which is provided with pneumatic suspension. This latter is obtained by means of a plunger in a steel tube; the tube is a downward continuation of the main-mast already mentioned. The bracing of the axle to a sliding collar which rides on the outside of the stationary tube, and thereby prevents the axle from tilting, is effected by hollow wood struts fitted with steel forks spliced in their extremities.

An ash skid is provided in front of the machine to prevent the propeller from hitting the ground, and there

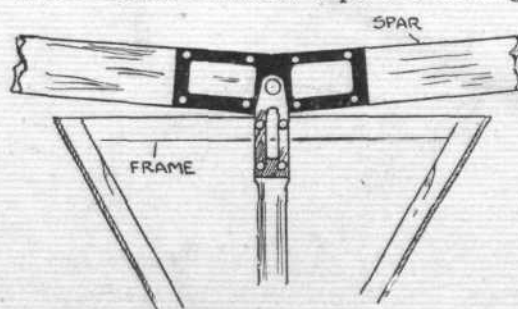
is a very light skid at the rear to protect the rudder. The forward skid is made of ash, and has a maximum square section of about $2\frac{1}{4}$ ins. Its extremity is laminated and curved upwards, the tip being protected by a steel plate.

The Tail.

At the rear of the body is the tail, consisting of two fixed planes, and three movable planes. The fixed members include a vertical and a horizontal plane arranged like the feathers on the shaft of an arrow, and their object is to fulfil much the same purpose in respect to the flight of the machine. The movable members are virtually extensions of these planes; the continuation of the horizontal plane forming an elevator, while the continuation of the vertical plane makes a rudder. An additional rudder working in unison with the first is provided beneath the elevator.

Control.

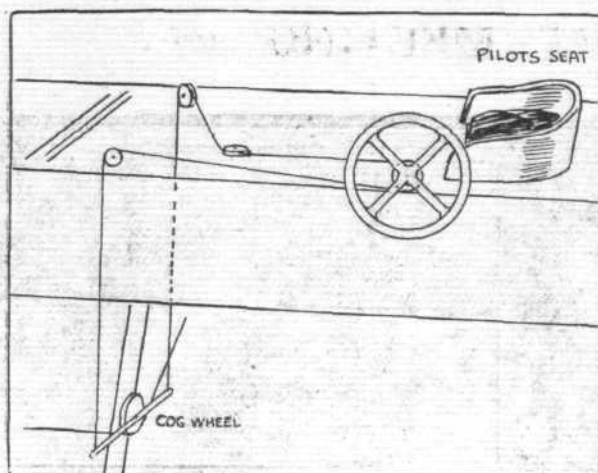
The control of the machine is effected by means of two hand wheels and a pedal. The wheels are placed vertically on each side of the pilot's seat, and lie just outside the body of the machine. That on the right when moved forwards dips the trailing edge of the



"Flight" Copyright.

The Antoinette Flyer.—Sketch showing how the rear spars in the wings are pivoted to the frame to facilitate warping.

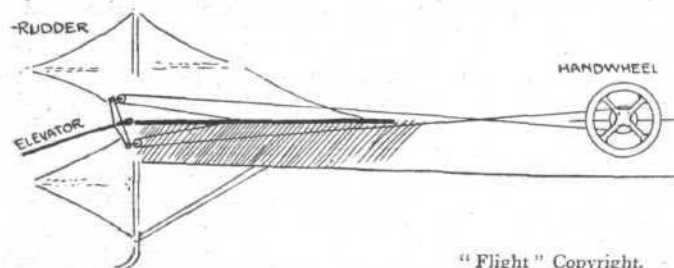
elevator. A similar movement of the left-hand wheel warps the trailing edge of the right-hand main-wing downwards. Pressing forward the right foot puts the trailing edge of the rudder



"Flight" Copyright.

THE ANTOINETTE FLYER.—Sketch showing how the control wheel on the left of the pilot's seat is coupled up to the cog-wheel which warps the wings, as shown in another illustration.

over to the right, and therefore steers the nose of the machine in the same direction. In the above, the terms right and left apply to the pilot, who sits facing in the direction of flight.

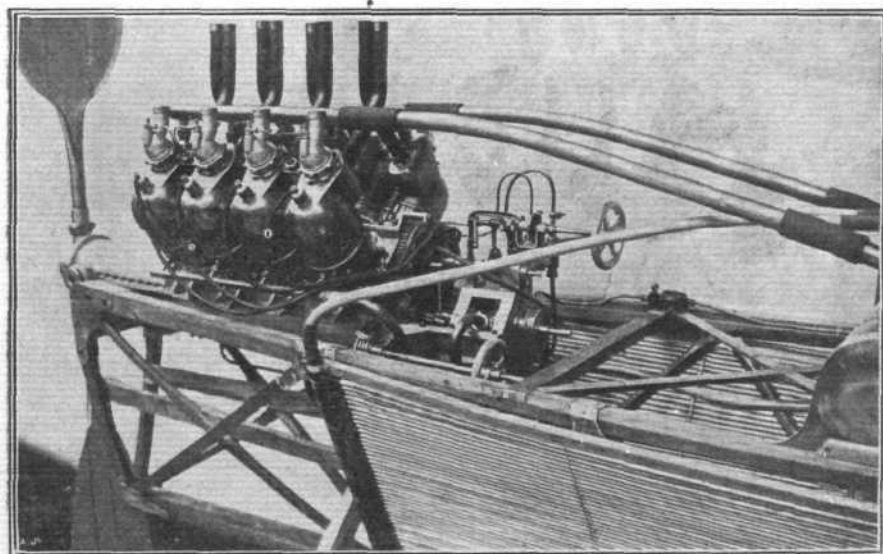


"Flight" Copyright.

THE ANTOINETTE FLYER.—Sketch showing how the hand wheel on the right of the pilot's seat is coupled up to the elevator. The use of pulleys on the elevator cross-bar should be noted.

Adjacent to the main control-wheels are two smaller wheels for adjusting the throttle and the ignition.

The warping of the wings is effected by the intermediary of a cog-wheel and chain mechanism illustrated

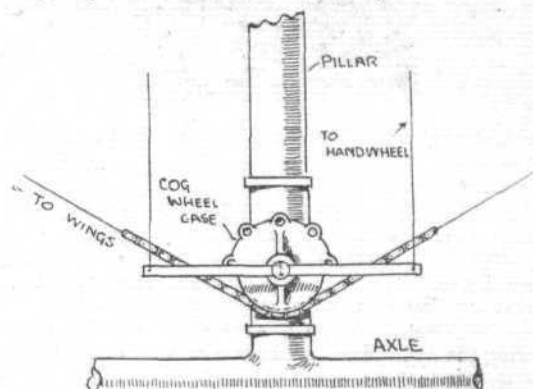


THE ANTOINETTE FLYER.—View showing an 8-cyl. Antoinette engine installed in the bows of an early flyer. The construction of the main frame and attachment of the condenser are well illustrated, as also is the method of carrying the crank-chamber forward for the support of the propeller.

in an accompanying sketch. The cog-wheel is mounted in a case attached to the lower end of the stationary tube which forms an extension of the main-mast. It is operated by a lever attached to its spindle, and the extremities of this lever are controlled by wires from the hand wheel already mentioned. In mesh with this cog-wheel is a chain, the extremities of which are coupled by wires to the rear main spars of the wings. Partially rotating the cog-wheel draws the chain from one side to the other of the machine, and thus pulls downwards one main spar while it allows the other to rise.

This movement takes place with the greatest freedom and nicety, owing to the careful construction of the wings and to the method of mounting the rear spars on a pivot as already described. The forward spars, being fixed rigidly to the body of the machine, remain stationary, and thus the result of the manoeuvre is that helicoidal deformation of the wing surfaces which is commonly described by the term "warping."

In some cases the Antoinette flyer is fitted with balancing flaps instead of the warping device.



"Flight" Copyright.

THE ANTOINETTE FLYER.—Sketch showing the arrangement of the control of the wires used for warping the wings by means of a cog-wheel and chain.

Engine and Propeller.

The engine on the Antoinette is placed right up in the bows, the crank-chamber being supported on two transverse girders in the body. The crank-chamber is cast so that it extends up to the boss of the propeller, which is fastened direct to the crank-shaft. The engine is of the multi-cylinder V type, having eight or sixteen cylinders, according to the power which it is intended to provide. Each cylinder is a separate steel forging, and is complete with its head and valve-chamber. The inlet-valves are atmospheric, and instead of a carburettor the petrol is injected by means of a pump. The water-jackets are made of copper. A feature of the cooling system is that very little water is carried, the idea being to allow the water to be converted into steam, which is then condensed into water again by a tubular aluminium condenser lying outside the body of the machine. The arrangement of this condenser is very well illustrated in the accompanying illustrations, but it is important to remark that the cedar panelling of the body, which elsewhere gives the appearance, and possibly some of the buoyancy, of a boat, is cut away behind the radiator to facilitate freer air-circulation round the tubes.

BLACKPOOL FLIGHT MEETING—(continued).



IN THE GRAND STAND AT BLACKPOOL FLIGHT MEETING.—In the centre is Sir Hiram Maxim, and to the left is Alderman Frankenberg, Ex-Mayor of Salford.

Friday, 22nd.

SEASIDE resorts are notably places of exceptionally changeable weather, with a penchant towards wind; they are not, therefore, fundamentally suited to flight in the present state of the art. Blackpool is no exception to the rule; indeed, there are those who say it is worse than most, and the breezes which have freshened the air there during the flying week lend some colour to the suggestion.

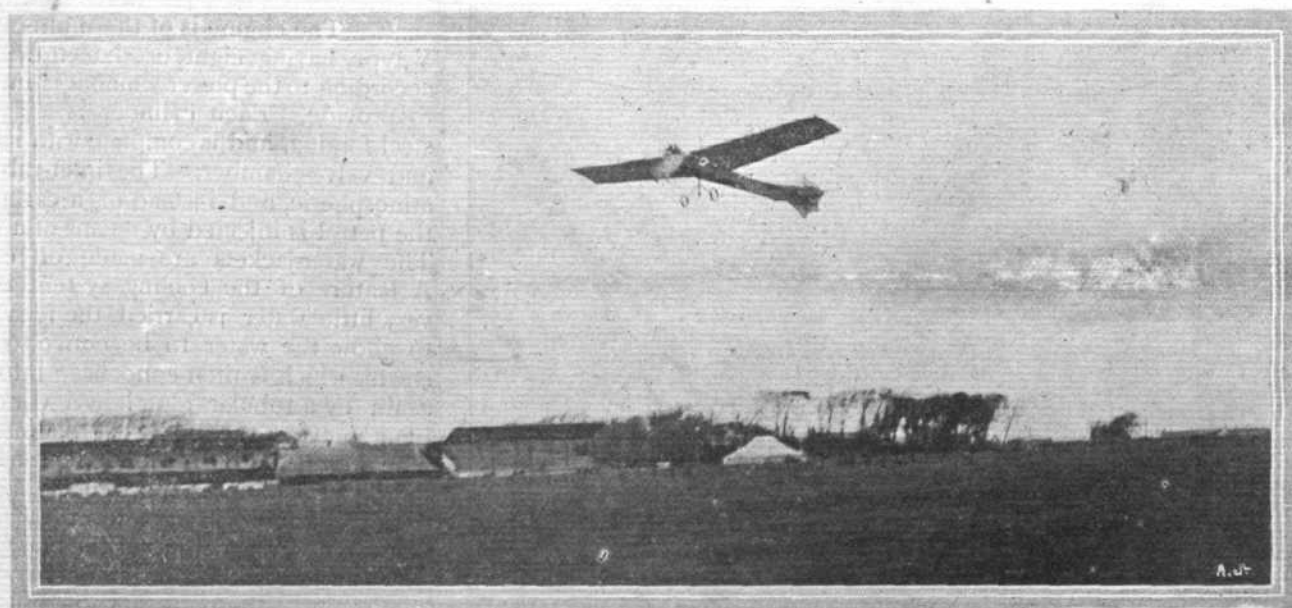
From a flying *dies non* on Thursday, a patient and enduring British public waked to an even worse kind of a morning on Friday. There was less wind, it is true, but there was more rain and the atmosphere was so grey and laden with moisture that the conditions reached the high-water mark of unpleasantness. On the ground not a soul had faith in any prospect of excitement other than that provided by the necessary exercise of skill in negotiating swamps and quagmires without getting completely embedded in slime. Local boot shops did a roaring trade in the sale of "goloshes." Thus equipped against the evil of wet feet they sallied forth prepared for the worst.

Presently the rain stopped, which made life more endurable, but

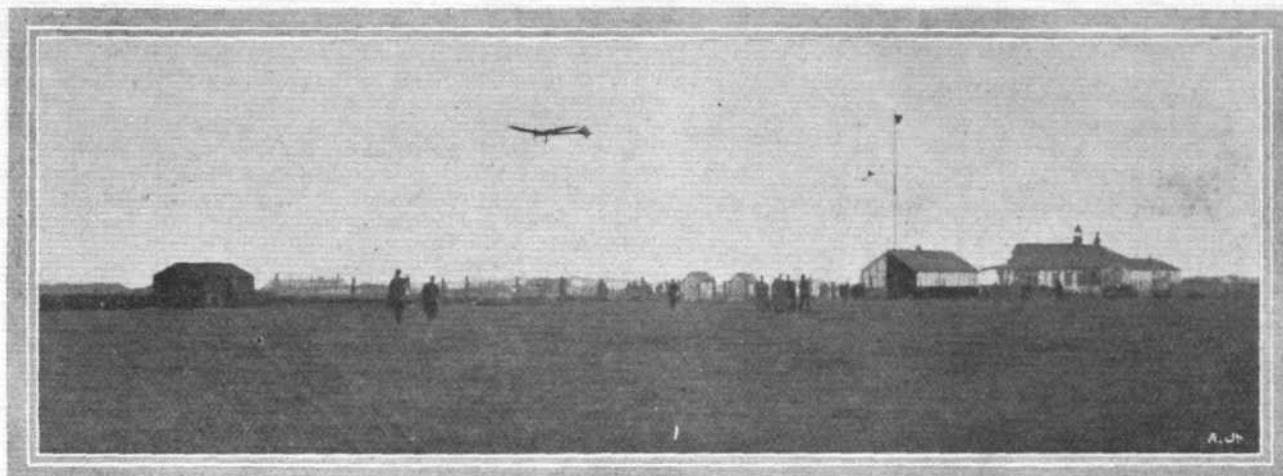
the wind continued to be represented on the official signalling "hanger" by a black pyramid and a black square, which, being interpreted, signified "more than 15 miles per hour." This was the limit provided for by the code, but, as a matter of fact, the actual velocity as registered by the gauge was often in the order of 30 miles an hour. Flying seemed impossible in such conditions; it remained for Latham to prove the contrary.

To everyone's complete surprise and satisfaction the red flag was hoisted on the mast at half-past twelve, and shortly afterwards the Antoinette monoplane, dragged by a horse, proceeded slowly across the ground from the sheds to the starting line. Even then no one believed Latham could fly, although it was obvious that he would make an attempt.

At one o'clock the wind registered 28 miles an hour, and was proportionately gusty. Latham embarked on his machine, and the Antoinette engine was started. The flyer ran along the ground and came to rest a few yards from the start with its tail in the air. Evidently the expected had happened, the machine was uncontrollable in such weather.



LATHAM'S GREAT FLIGHT IN A HALF GALE AT BLACKPOOL LAST WEEK.—Note the bending trees from the high wind in the distance.



Latham "crossing" the wind at Blackpool Meeting last Friday week on his Antoinette monoplane, during his flight through the half gale.

"Flight" Copyright Photo.

It was quickly realised, however, that such was not the case; it was merely a false start. Once more the propeller whizzed in the air, and again did the mechanics run alongside, steadying the tail as the machine gathered way in a second attempt. Letting go, they left the machine to Latham, and in a few yards those watching the proceedings in breathless excitement saw the wheels quit contact with the ground.

A flight had commenced. Would it continue? Latham was heading in the teeth of the wind; painfully it seemed did the flyer make progress. Grasping the two control wheels, Latham could be seen working them quickly to and fro as he battled against the gusts. Warping the wings, dipping the elevator, turning the rudder, all these manoeuvres did he bring into play with infinite skill as he was swayed from side to side.

Sometimes the machine would heave bodily beneath a specially severe gust and for a moment would seem about to be blown backwards, yet after a pause it continued to forge ahead. Not an eye but watched its every move, as, slowly, it circled the course twice in succession and then settled gracefully down by the Judges' box. It was a superb exhibition of skill, pluck, and daring, as unexpected as it was completely successful.

In the second lap Latham flew quite outside the course, beyond the spectators in the lower priced enclosures, and owing to this fact, only his first lap-time counted for the slow speed test. His times were as follows:—

LATHAM.

Lap 1	...	25'09 m.p.h.	...	Time, 4 m. 45 s.
" 2	...	21'65 "	...	" 5 m. 30½ s.

Latham's flight concluded the day's proceedings, for the wind having increased still more in violence, although Saunderson gave notice of an attempt, he did not leave his shed.

Saturday, 23rd.

More rain falling on Friday night and continuing on Saturday morning, completed the conversion of the ground round the sheds into a lake. It was impossible to enter Farman's hangar except by the use of a bridge of planks, and even that was little enough protection. Quite early in the morning there was a negligible wind, but the chances of keeping the engines running properly in such exposed positions as one and all of them have on flying machines, gave little hope of any flying unless the weather cleared up. The local prophets once more put forward the mystic two o'clock as the hour when the day should brighten, but once more also the "clearing shower" continued to repeat itself. To make matters worse, moreover, the wind freshened, so that even if the rain had ceased the conditions would not have greatly improved.

It was an inglorious ending to a meeting which opened under such auspicious circumstances. Many of the competitors have never so much as put their machines outside their sheds during the week, but that on the whole was their own fault, for they ought to have been ready at the beginning of the week for practical work in the field instead of turning up at such a time that they needed two or three days' tinkering to get their flyers into condition. It was for their benefit that the Committee decided to extend the meeting over the Monday and Tuesday of this week, but the prolonged meeting was bound to lose much of its interest, for all the important aviators had engagements which necessitated their departure.

Monday, 25th.

On Monday, there was no improvement in the weather, and so at ten o'clock the Aviation Committee met and decided that it would be useless to continue. The meeting was therefore declared at an end. Very shortly afterwards the wind moderated, but even so the

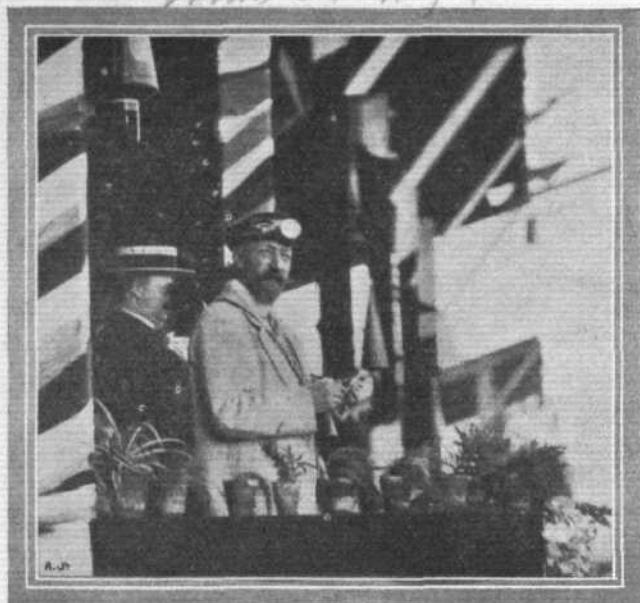
Similar to Smith's 2nd May 2



AFTER LATHAM'S DARING FLIGHT AT BLACKPOOL.—The aviator (X) being escorted back to his hangar immediately after he had finished his splendid achievement.

"Flight" Copyright Photo.

From box 7169 4



"Flight" Copyright Photo.

The Grand Duke Michael watching the flights at Blackpool from the private stand of the Lancashire Aero Club. Behind him, with the field glasses up, is Mr. Huntley Walker, Chairman of the L.A.C.

conditions were hardly ideal for flying, inasmuch as the ground was dotted overmuch with pools of water. A large crowd of spectators visited the ground, and during the afternoon watched the attempts of British experimenters to fly. The only one to meet with any success was A. V. Roe, who induced his triplane, which now has a 24-h.p. engine fitted, to leave the ground for 40 or 50 yards. Creese tried his monoplane, but apparently the rain had affected his planes, and he could not get the machine to rise. Saunderson and Neale, who also had their monoplanes out, did not succeed in achieving free flight. During the day the Antoinette machine which Latham had used was packed, and rumour had it that it had been purchased by Delagrange for £2,000.

Results.

The final results of the flying competitions at Blackpool were announced at a dinner given by the Mayor, Mr. Councillor Fleming, at the Hotel Metropole, on Saturday evening, when cheques were handed to the successful pilots, Mr. Henry Farman receiving £2,400, M. Rougier £820, M. Paulhan £530, and M. Hubert Latham £400, in addition to the £100 Manchester Guardian Cup.

Four competitions fell through. They were the *Daily Mail* Prize for the greatest altitude above 200 ft., the Passenger Carrying Prize, the All-British Prize, and the Ashley Competition, the last two being for British aviators. It was unfortunate that on the dates set down for attempts for the altitude and passenger carrying prizes the weather should have rendered it impossible for any such trials to be made. Mr. Roger Wallace, K.C., announced that the Aero Club would present their gold medal to Mr. Henry Farman for his world's record flight at Rheims, and to M. H. Latham for his flight in a gale of wind at Blackpool, which demonstrated that aeroplanes are not mere toys. The summarised results were:—

Lancashire Aero Club's Grand Prix of £2,000, £720, £280, for the longest distance flown.

1. Farman (Farman biplane), 47 miles 1,544 yds., in 1h. 32m. 16½s.	£2,000
2. Rougier (Voisin biplane), 17 miles 1,544 yds. in 34m. 27½s.	720
3. Paulhan (Farman biplane) 15 miles 1,568 yds., in 32m. 17½s.	280

"Daily Sketch" Prize of £400, for speed; second £100, over three laps (about 6 miles).

1. Farman (Farman biplane), speed 36·38 miles per hour, time 9m. 49½s.	£400
2. Paulhan (Farman biplane), speed 32·8 miles per hour, time 10m. 54½s.	100
3. Rougier (Voisin biplane), speed 32·33 miles per hour, time 11m. 3½s.	—
4. Latham (Antoinette monoplane) (completed two circuits only), speed 23·67 miles per hour, time 10m. 15½s. (This was done in a gale)	—

"Manchester Guardian" Prize, for the slowest circuit (about 2 miles). A cup, value £100, with £100 in specie added money.

1. Latham (Antoinette), time 5m. 30½s., speed 21·65 miles per hour	Cup and £100
2. Paulhan (Farman), time 4m. 6½s., speed 28·9 m.p.h.	—
3. Rougier (Voisin), time 4m. 0½s., speed 29·72 m.p.h.	—
4. Farman (Farman), time 3m. 19½s., speed 30·86 m.p.h.	—

Prize for General Merit of £300, £150, and £50, for the three competitors who in the opinion of the stewards of the meeting shall have performed the most meritoriously during the meeting.

1. Latham (Antoinette monoplane), for his flight of nearly 6 miles in a high wind on Friday, when its velocity ranged from 23 to 40 miles an hour	£300
2. Paulhan (Farman biplane), for his flight of nearly 16 miles on Tuesday, in a wind varying from 15 to 23 miles an hour	150
3. Rougier (Voisin biplane), for his flight of nearly 18 miles on the opening day	50



"Flight" Copyright Photo.

Flyers at Blackpool.—Mr. Henry Farman and M. Paulhan.



"Flight" Copyright Photo.

Colonel Grantham and Mr. Vere Ker-Seymer, who acted as joint Secretaries to the Blackpool Meeting.

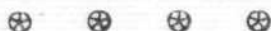


"Flight" Copyright Photo.

Flyers at Blackpool.—M. Latham and M. Rougier.

Prize for Competitors' Assistants. £50 to be distributed among the assistants of the competitor who shall have completed the greatest number of circuits, not reckoning the long distance event.

- | | | | |
|---------------------------------|-----|-----|-----|
| 1. Rougier (Voisin biplane) ... | ... | ... | £50 |
| 2. Paulhan (Farman biplane) ... | ... | ... | — |



DONCASTER FLIGHT MEETING.

Three Blank Days.

THURSDAY, Friday and Saturday saw no flying at Doncaster, and it was therefore decided to continue the meeting over Monday and Tuesday. Practically the only incident on Thursday was the naturalisation of Mr. S. F. Cody, the actual ceremony taking place in front of the grand stand. After he had taken the oath of allegiance and had signed the certificate of naturalisation on the Town Clerk's back, the band struck up the National Anthem and Mr. Cody stood bareheaded at the salute. Mr. Cody at once sent in his entry for the *Daily Mail* £1,000 prize for the first British aviator who flies a circular mile on an all-British machine. Friday was relieved by a challenge from M. Sommer to Mr. Cody for a series of five flights round the Doncaster course for 10,000 frs. a side. This, however, was not accepted by Mr. Cody. Saturday saw an attempt being made in the early morning by Capt. Lovelace on Mr. Ballin Hinde's Bleriot monoplane, and although he succeeded in rising to a good height, his success was short-lived, for he was unable to counteract the sudden attack of a gust of wind, and the machine came to earth with a shock, but the pilot escaped unhurt. Capt Maitland brought out Mr. Moreing's Voisin, which has been fitted with gyroscopes; but no flying was essayed; and on returning to its shed the machine tipped on to its elevating plane, without, however, doing any serious damage.

Monday, 25th.

Although there was not very much flying during mid-day, quite a number of short flights were made during the morning and in the twilight, while in the afternoon Le Blon was the centre of a most exciting incident. Sommer was the first to start in the morning, soon after seven, and he made a couple of circuits. Cody also did the same, and Delagrange improved the shining hour by giving instruction to his pupils. Sommer also went round the course once with a friend on his Farman biplane. Till the afternoon there was nothing to break the monotony as far as the general public were concerned until Cody made a trip round the course at half-past three. Then Le Blon started off on his Bleriot, but he was caught by the wind and blown out of his course. After the machine apparently had righted itself it suddenly headed for the shilling

enclosure, and a catastrophe appeared inevitable. By dextrous and splendid manipulation Le Blon however succeeded in getting his machine to rise just in time, and cleared the crowd as though they were a fence in a steeplechase, although immediately afterwards he fell to the ground. The machine was badly smashed, but Le Blon escaped unhurt. The chief flights were made by Sommer, who covered 16 miles 30 yards, while Delagrange was second with 7 miles 740 yards, and Cody third with 2 miles 1,560 yards.

The total value of the prizes awarded was £4,150, exclusive of the £100 cup. The total distance flown was roughly 116 miles.

Tuesday, 26th.

On the last day most of the flying was done in the forenoon, and Sommer opened the proceedings by making the necessary five circuits for the Chairman's Cup, and as no one else disputed the event, he had a "walk-over." He continued another lap for the Whitworth Cup for the longest distance flown during the day, the total distance of 9 miles 57 yards being completed in 15 mins. 8½ secs. Delagrange then tried for the Tradesmen's Cup for the fastest circuit, and on his Gnome-engined Bleriot completed one lap, during a flight of 5 miles 1,695 yards, in 1 min. 47½ secs., and as this worked out at a speed of 49.9 miles an hour, this was announced as a world's record. Molon, also on a Bleriot, completed three rounds, but he was considerably slower than Delagrange. A second essay by Sommer was the best which the meeting produced, for he continued flying for nearly three-quarters of an hour, completing twenty rounds, or 29 miles 1,575 yards in 44 mins. 53 secs. During the afternoon the wind increased, and all prospect of further flying had to be abandoned. This, therefore, concluded the meeting, and later in the evening the Judges announced the following awards:—

Whitworth Cup (for longest distance of the day).—Sommer, 38 miles 1,580 yards, winner; Delagrange, 5 miles 1,695 yards; Molon, 2 miles 1,435 yards.

Doncaster Cup (for the greatest aggregate distance of the meeting, complete laps only to count).—Sommer, 136 miles 280 yards, winner; Le Blon, 39 miles 1,745 yards; Delagrange, 29 miles 795 yards; Molon, 17 miles 1,525 yards.

Tradesmen's Cup (for the fastest circuit).—Delagrange, 1 min. 47½ secs.



GROUP OF JUDGES, &c., AT DONCASTER FLIGHT MEETING.—From left to right—At back: Mr. Stacey Hatfield, Capt. Fleming. Middle, behind: Mr. W. Le Queux, Capt. Daney Watt, Major Kennedy. Front row: Mr. Staplee Firth, Mr. S. T. Medlicott, Mr. T. H. Wright, Mr. H. Lodge, Mr. A. B. E. Cheeseman, Mr. H. D. Swan, Capt. A. W. Barrett. Seated: Mr. J. E. Speranza, Secretary of the Meeting.

Chairman's Cup (for the best time over 5 circuits, distance 7 miles 495 yards, for biplanes).—Sommer flew over in 12 mins. 27½ secs.

The Great Northern Railway Cup (for the best time over 10 circuits) should have been competed for on Saturday afternoon,

but had to be abandoned; while nobody qualified for the **Leeds Cup** (offered for a flight for 45 mins.). As Cody only gave exhibition flights, nobody qualified for the **Women's Aerial League Medal** offered for the best flight by a British aviator. Several other prizes were not won.



JUVISY FLYING MEETING.

In our last issue we were able to give the results of this meeting up to Wednesday evening, and now record the happenings on the following day, which concluded the meeting. It was suggested that it should be continued to the end of the week, but there was some difficulty about policing the ground, and it was therefore decided to close down. The final day opened well, there being very little wind, enabling several of the fledglings to be out trying their wings.

Nabut, Koechlin, Baratoux, Gaudart and Gobron each rose from the ground, but none kept going for long. In the afternoon Bregi and De Lambert shared the honours, the former flying round the course, while the latter completed six circuits, the first of them counting for the Paris Municipal Council prize. In this, each competitor had to pass under a wire placed at a height of 5 metres, and then rise and pass over a small balloon placed at a height of 40 metres. In his first attempt on the 10th inst., Count Lambert's time was 2 mins. 27½ secs., but on this last day he reduced this to 1 min. 56½ secs., and so won the 25,000 frs. prize. The six rounds were completed in 12 mins. 9½ secs., while thirteen rounds were finished by Bregi in 33 mins. 3½ secs. The day was marked by a wind-up lunch given by the Société Encouragement d'Aviation to Count Lambert in honour of his wonderful flight round the Eiffel Tower, and during the function the guest of honour was handed a gold medal as a souvenir of his daring exploit. As will be seen from the following list of awards, Count Lambert captured

the lion's share of the prizes, Gobron and Bregi sharing the remainder. The prize money distributed amounted to 44,900 frs. :—

Results.

COUNT LAMBERT.		francs.
Paris Municipal Council prize ...	...	25,000
Seine General Council first prize ...	...	7,000
Scheuner-Kestner prize ...	...	1,000
André de Neuflyze prize ...	...	1,000
Proportion of other prizes not won ...	...	2,347'62
		36,347'62

JEAN GOBRON.

Seine General Council second prize ...	...	3,000
Mme. Paul Quinton prize ...	...	3,000
Paul Crétennier prize ...	...	1,000
Proportion of other prizes not won ...	...	345'24
		5,345'24

HENRI BREGI.

Bernard Dubos prize ...	...	2,000
Mme. Jane Falco prize ...	...	1,000
Proportion of other prizes not won ...	...	207'14
		3,207'14



MISCHIEF-MAKING AT THE MANSION HOUSE.

PUBLIC REPUDIATION BY THE THREE NATIONAL BODIES.

FORTUNATELY, there need be no doubt now in the minds of the general public as to the utterly irresponsible and unrepresentative nature of the ill-conceived meeting that has been called—or we might say “bluffed through”—by the Aeroplane Club at the Mansion House this week (Thursday evening). The three great British institutions that have the care of the aeronautic industry in their keeping have, in fact, very wisely issued a joint letter to the Press of this country making it clear that neither of them—the Aeronautic Society of Great Britain, the Aero Club of the United Kingdom, and the Aerial League of the British Empire—are in any way associated with, or represented at the “conference” in question. That letter reads as follows :—

The Control of Aviation.

SIR,—In a letter dated October 1st a body styled the Aeroplane Club of Great Britain and Ireland announced that the use of the Mansion House had been secured for the holding of a conference on Thursday, October 28th, to discuss the subject of “Aviation and its National Importance,” and that they had invited the various bodies and individuals interested in aeronautics to be present at the meeting.

In this connection we would remind you of the existence of a working agreement between the Aeronautical Society of Great Britain, the Aero Club of the United Kingdom, and the Aerial League of the British Empire, drawn up on May 3rd, 1909, with the concurrence of the aeronautical representatives in both Houses of Parliament and duly published, whereby those bodies recognise their spheres of activity to concern respectively the scientific, the sporting and social, and the patriotic phases of the movement.



M. Paulhan and the £10,000 Prize.

APPARENTLY M. Louis Paulhan has his eye seriously upon the £10,000 offered by the *Daily Mail* for a flight from London to Manchester, and intends to make a sporting attempt to win it, for on Sunday he took

advantage of a day off to explore the route by the aid of a 48-h.p. Daimler car. From what he was able to see, he thought the country was splendidly suited for the flight. The trees were a nuisance, but he could always fly high. He will, however, motor over the course two or three times before attempting to fly.

As it appears the proposed conference at the Mansion House is likely to overlap the declared policy, aims, and objects of the Aerial League, and in view of the fact that that body had announced in the Press that its president, Lord Esher, intended to preside at a public patriotic meeting at an early date, after very careful consideration the executive committee of the League have come to the conclusion that, though they wish to co-operate in the most friendly spirit with all properly constituted aeronautical bodies, in the present case they are unable to send representatives. By the agreement between the Aeronautical Society, the Aero Club, and the Aerial League, the calling of public meetings is left in the hands of the Aerial League. On that account, and because of the meeting previously announced by the League, the Aero Club decided not to be represented at the Mansion House on Thursday. The Aero Club is entirely representative in its constitution in that under its scheme of association, among other important matters, it has handed over to a general committee, upon which all associated clubs will be adequately represented, the control of the national sport and the election of suitable representatives to the International Aeronautical Federation.

The Council of the Aeronautical Society of Great Britain, the oldest scientific institution of the kind in the world, has decided not to attend the conference, because it concurs with the action of the Aerial League and the Aero Club. The aim of this joint letter is to prove that the recognised aeronautical bodies are working in mutual co-operation and not, as has been suggested in some quarters, in rivalry or dissent.

R. A. CAVE BROWNE CAVE, Captain R.N., Chairman of the Aerial League of the British Empire.

ROGER WALLACE, Chairman of the Aero Club of the United Kingdom.

EDWARD P. FROST, President of the Aeronautical Society of Great Britain.

advantage of a day off to explore the route by the aid of a 48-h.p. Daimler car. From what he was able to see, he thought the country was splendidly suited for the flight. The trees were a nuisance, but he could always fly high. He will, however, motor over the course two or three times before attempting to fly.

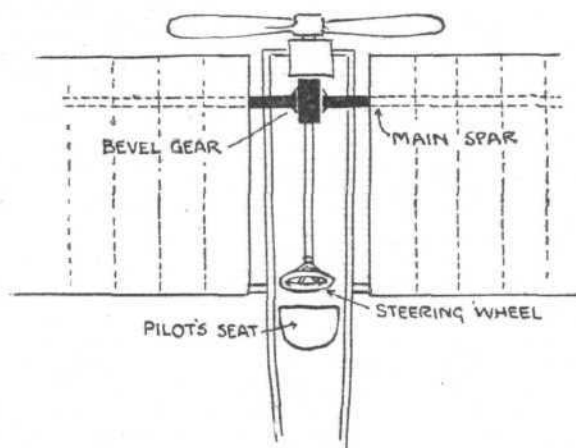
FLYER SILHOUETTES FROM THE PARIS SALON.

(Continued from page 674.)

GREGOIRE-GYP.

MONOPLANE, principally interesting on account of the method of warping the wings by means of a bevel-gear mechanism, which rotates the tubular steel main spars. The arrangement is both neat and compact, more particularly, however, in that it is operated by the steering-wheel and is the sole control in flight. Depressing the horizontal steering-column rotates both spars in unison and warps both wings in the same sense.

The warping of the wings by means of movable main spars depends on the provision of a fixed fulcrum to hold the inner extremities of the wings rigid. An accompanying sketch shows the arrangement diagrammatically.

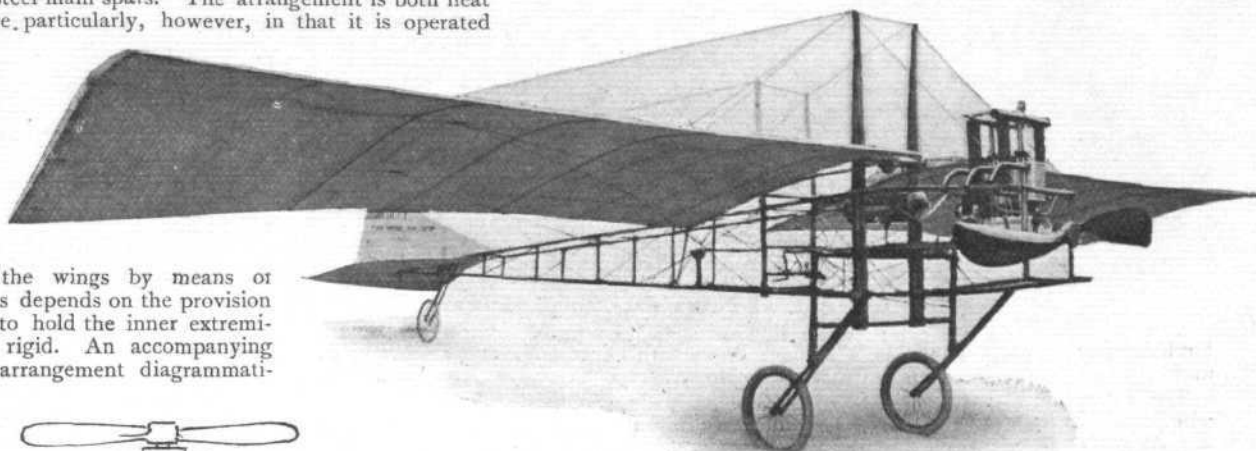


"Flight" Copyright.

The wings on the Gregoire-Gyp monoplane are warped by means of movable main spars connected through bevel gear to the steering-wheel, as shown above.

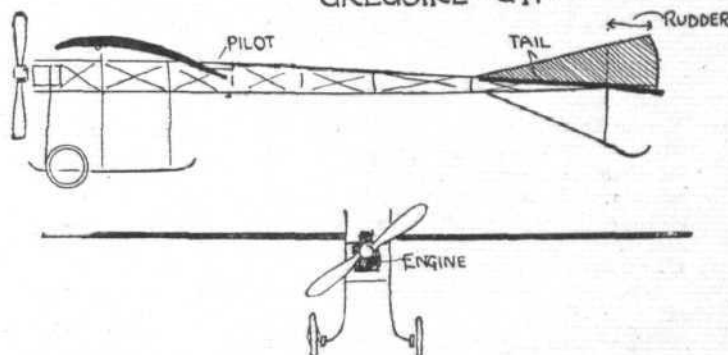
A rudder is fitted for use when the machine is running about on the ground, but it is not intended to be operated in flight.

While considerable care and attention has been given to the construction of the main wings and their warping mechanism, there



Gregoire-Gyp Monoplane at Paris Flight Show.

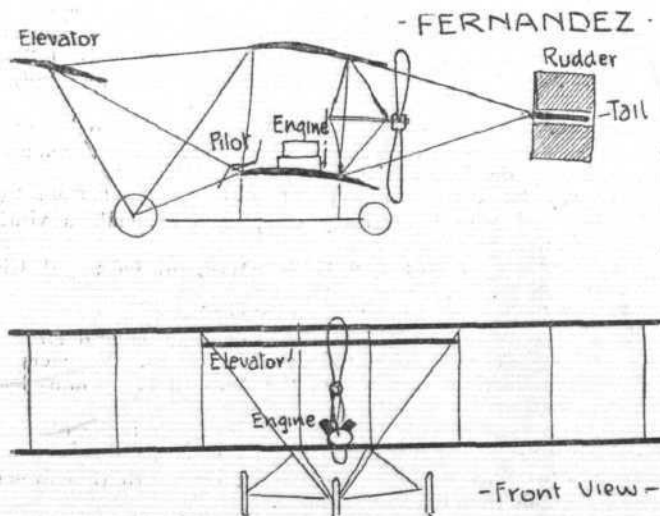
GREGOIRE - GYP



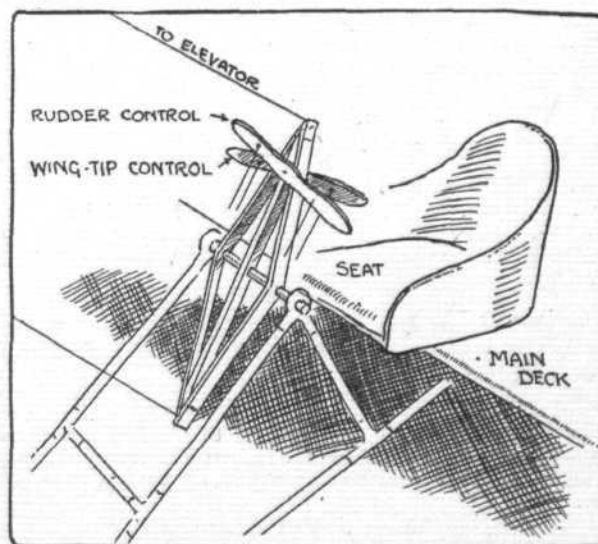
is a noticeable absence of equally good workmanship elsewhere. The chassis, which combines ski and wheels, at first glance resembles that on the Hanriot, and a comparison of the two designs is instructive.

FERNANDEZ.

Small biplane, designed to have a similar appearance to the American-built Curtiss flyer; its construction is, however, less convincing. Bamboo is used extensively in the outrigger framework,



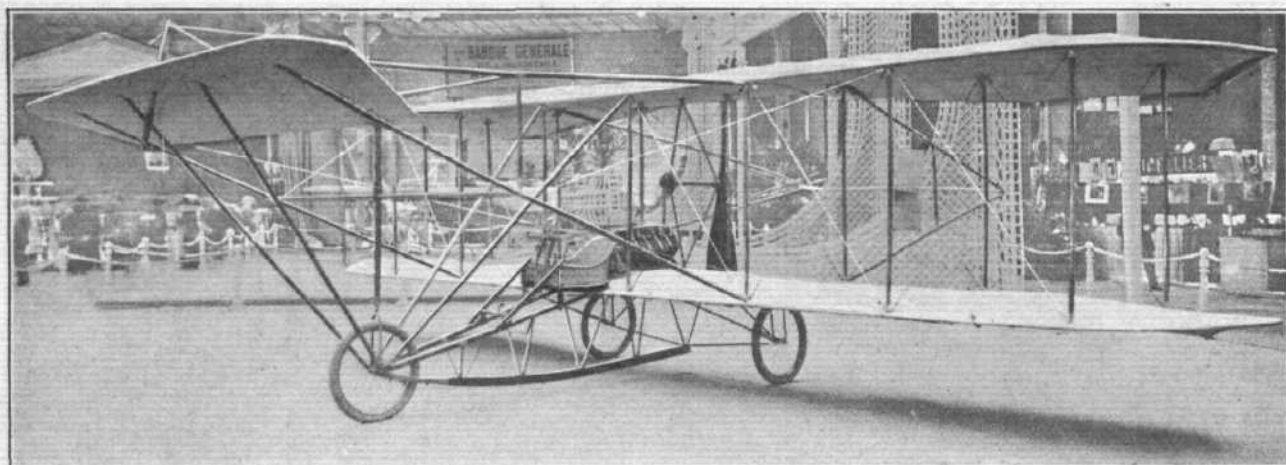
-Front View-



"Flight" Copyright.

Steering and balancing is effected on the Fernandez biplane by the use of two hand levers mounted on a vertical frame, which is itself pivoted for the purpose of operating the elevator.

but elsewhere the spars are wood. The decks are double surfaced, and the trailing extremities of the planes are arranged to warp



Fernandez Biplane at Paris Flight Show.

for balancing purposes, a point of difference between this flyer and the Curtiss, which has independent balancing planes.

The control levers are peculiarly arranged, but their operation will be obvious from the accompanying sketch. In front of the pilot is a pivoted vertical post, on which are pivoted two adjacent cross-bars. Rocking the post to and fro operates the elevator; tilting the cross-bars, separately or together, as may be necessary, warps the decks and operates the rudder.

It is noticeable that the pilot's seat is well to the fore of the decks. The engine is arranged to drive a single propeller through a vertical chain.

The supplementary surfaces include a monoplane elevator in front and a rudder behind. An interesting constructional feature, well illustrated by the accompanying photograph, is the three-wheeled chassis.

(To be continued.)

AERO CLUB OF THE UNITED KINGDOM.

OFFICIAL NOTICES TO MEMBERS.

Committee Meeting.

A MEETING of the Committee was held on Tuesday, the 26th inst., when there were present: Mr. Roger W. Wallace, K.C., in the chair, Mr. Ernest C. Bucknall, Col. J. E. Capper, C.B., R.E., Mr. Martin Dale, Capt. A. H. W. Grubb, D.S.O., R.E., The Earl of Hardwicke, Professor A. K. Huntington, Mr. F. K. McClean, Mr. C. F. Pollock, Mr. J. Lyons Sampson, Mr. Stanley Spooner, H. E. Perrin (Secretary).

New Members.—The following new Members were elected:—

R. G. Alford.	Guy Francis Laking, M.V.O., F.S.A.
F. S. Bennett.	R. Borlase Matthews.
Detmar Blow.	H. A. F. Musgrave.
David C. Bolton.	Percy W. Northey.
Francis A. Bolton, J.P.	J. Percy, J.P.
R. I. Boothby.	P. Phillips.
Wilson Story Carr.	G. H. Pointer.
John Case.	J. Graham Reece.
Miss Eleanora Money Coutts.	Francis John Robinson.
Gilbert Dennison.	Francis Heron Rogers.
Lord Egerton of Tatton.	G. V. Sassoon.
Atherton Flemming.	F. Graham Sharp.
Egbert Goddard.	H. Gordon Sharp.
Capt. Hyde Hamilton Gordon.	Ernest W. Sprott.
Capt. Harold P. Green.	Maj. F. P. S. Taylor.
Howard W. Gush.	William Brown Thomson, M.D.
P. S. B. Hall.	Athol Thorne.
H. S. Higginbotham.	Cecil F. H. Twining.
G. B. Hynes.	G. R. L. Wingate.
A. W. Isenthal.	Francis Whitworth Wright.
Mrs. E. P. Krabbe.	

Council.

The Earl of Lonsdale and the Rt. Rev. Bishop Weldon have been unanimously elected to the Council of the Aero Club of the United Kingdom.

Aero Club Gold Medal.

The Committee of the Aero Club of the United Kingdom have awarded their Gold Medal to Mr. Hubert Latham in recognition of his flight in a 40-mile wind at Blackpool, on Friday, October 22nd, 1909.

Association of Aero Clubs.

At a meeting of representatives of the various aero clubs, held at Blackpool, on Wednesday, the 20th October, 1909, the following resolution was unanimously passed:—

"That the clubs and societies interested in aviation be invited to nominate three members each to form a committee, to meet repre-

sentatives of the Aero Club to discuss the question of concerted action, with a view to advising the members of their respective clubs."

The meeting will take place in London during the Olympia Motor Show, between the 12th and 20th November, and the exact date and place will be announced later.

Monthly Dinner.

The Monthly Dinner will take place on Tuesday next, November 2nd, 1909, at the Hotel Chatham, Regent Street, S.W., at 8 p.m. (5s. 6d. each). Members wishing to be present are requested to notify the Secretary not later than Monday, November 1st, 1909. Evening dress optional.

Shellbeach Flying Ground.

Members visiting the flying ground are requested to have with them their membership cards, as strict instructions have been given to admit only members to the flying ground.

Members are also reminded that access to the aeroplane sheds can only be obtained with the written consent of the owners of the flying machines.

Telephone.—The telephone has now been installed. Members wishing to telephone there are requested to ask for Shellbeach, Minster, Sheppey, no number being required. The telephone is installed in the Club House, and also to the sheds on the grounds.

Erection of Sheds.—Members wishing to erect sheds at Shellbeach are requested to apply to the Secretary, who will supply all information.

Members visiting the flying ground are requested to have with them their membership cards, as strict instructions have been given to admit only Members to the flying ground.

Railway Arrangements.—The following reduced fares have been arranged with the railway company for members visiting Shellbeach:—

1st Class return, 8s.; 2nd Class return, 6s. 6d.; 3rd Class return, 5s.

Tickets available for one month from date of issue.

Members desiring to avail themselves of these reduced fares are required to produce vouchers at the booking offices. Vouchers can be obtained from the Secretary of the Aero Club. Trains leave Victoria, Holborn, or St. Paul's.

For the convenience of Members, the best train is the 9.45 a.m. from Victoria, arriving at Queenborough 10.55. At Queenborough change to the Sheppey Light Railway for Leysdown (Shellbeach), which is 3-mile from the flying ground.

HAROLD E. PERRIN, Secretary.

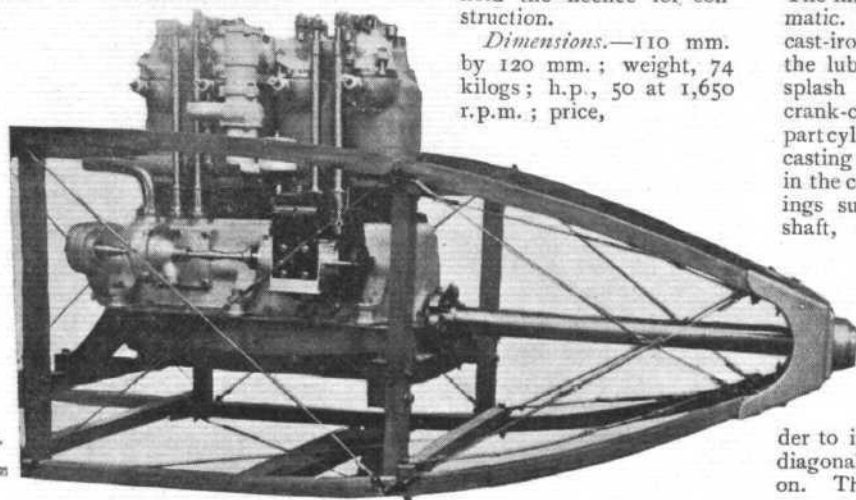
The Aero Club of the United Kingdom,
166, Piccadilly, W.

FLIGHT ENGINES AT PARIS SHOW—(continued from page 675).

C.A.M. 50-h.p.—Four-cylinder, vertical type, water-cooled engine, having separately-cast cylinders with copper jackets electrolytically deposited. A section of the cylinder and its jacket exhibited at the Salon is not remarkable for large water-space in the vicinity of the valves. Both valves are placed vertically in the cylinder-heads and both are mechanically operated. A peculiar detail is the use of concentric tappet-rods for operating the inlet and exhaust-valves of each cylinder. The most remarkable feature of this engine is that aluminium pistons are used.

The patents are those of Clerget, and Messrs. Malicet and Blin hold the licence for construction.

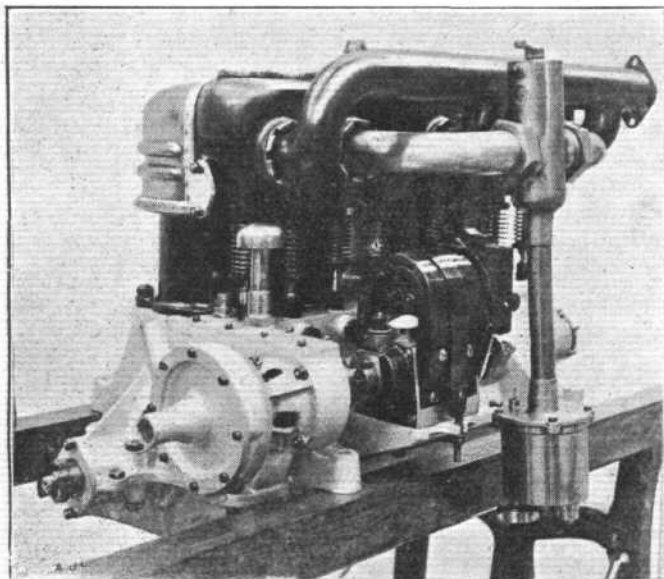
Dimensions.—110 mm. by 120 mm.; weight, 74 kilogs.; h.p., 50 at 1,650 r.p.m.; price,



PARIS FLIGHT SHOW.—View of the C.A.M. motor made by Messrs. Malicet and Blin. The pistons of this engine are made of aluminium.

Dutheil-Chalmers.—Horizontal opposed cylinder engines, built both in 2 and 4-cyl. types. The cylinders and pistons are steel; the water-jackets are made of copper. Particulars of the construction of the engines have already appeared in FLIGHT.

Clement-Bayard 40-h.p.—Four-cylinder vertical water-cooled engine, cast *en bloc*, but having part of the water-jacket made out of a single sheet of beaten copper. The copper is fastened in place by a band of steel, held down by screws. All the valves are arranged on the same side, and are mechanically operated. The cam-shaft



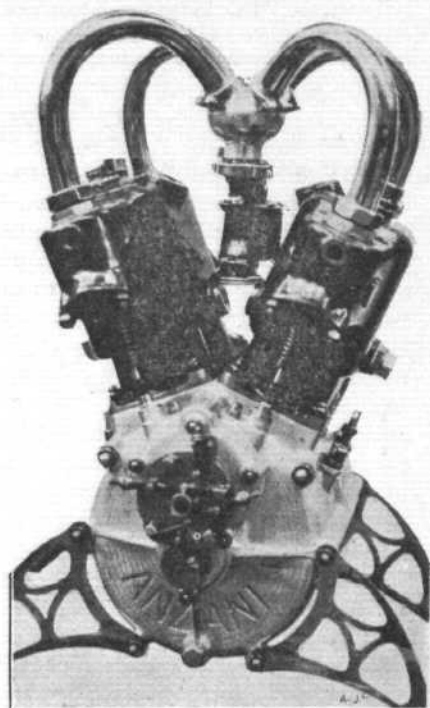
PARIS FLIGHT SHOW.—View of the 40-h.p. Clement-Bayard engine, showing the fastening of the copper water-jacket to the cylinder-casting.

operates a small oil-pump direct, while a secondary shaft drives the magneto and water-pump. The design is very much on the lines of the automobile engine.

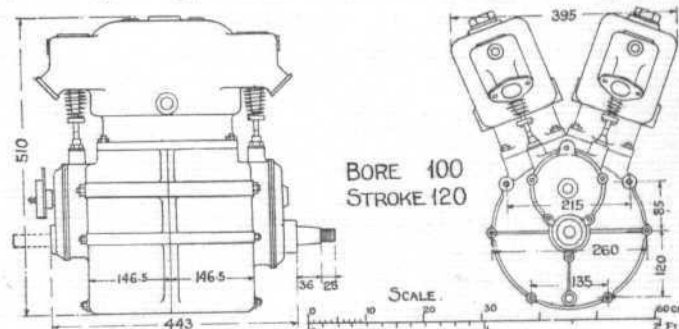
Dimensions.—100 mm. by 120 mm.; weight, 100 kilogs.; h.p., 40.

Anzani 35-h.p.—Water-cooled 4-cyl. V-type engine, having the cylinders cast in pairs with the valve-chambers at each end of the casting. The exhaust-valves for opposite cylinders are controlled by the same cam-wheel by means of rock-levers; this mechanism is of course in duplicate, as it is required at both ends of the engine. The inlet-valves are automatic. Steel pistons with cast-iron rings are used; the lubrication is on the splash system. The crank-chamber is a two-part cylindrical aluminium casting joined vertically in the centre. Two bearings support the crank-shaft, and the crank-chamber en-

closes two balanced fly-wheels. The cylinders are set at 45° , and the order of firing is from one cylinder to its opposite, then diagonally across, and so on. The firing intervals are not equal throughout the cycle of two revolutions, owing to the displacement of the axes of the cylinders in the V formation. There are two periods of 180° (*i.e.*, a half-revolution), but the other two are 180° plus or minus 45° . Thus if the first interval is $(180 - 45) = 135^\circ$ then the second will be 180° , the third $(180 + 45) = 225^\circ$, and the fourth 180° . The crank-shaft has two



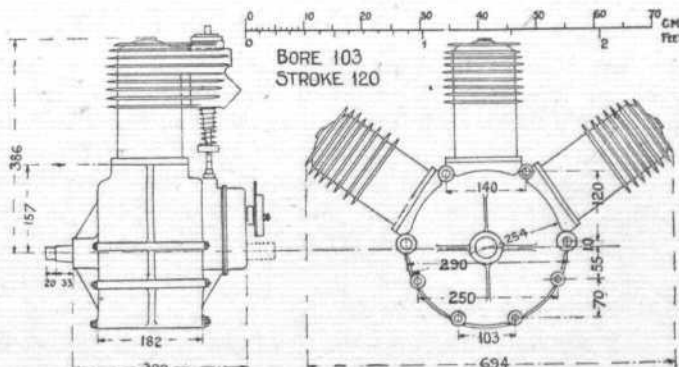
Paris Flight Show.—The new 35-h.p. 4-cyl. water-cooled Anzani engine.



PARIS FLIGHT SHOW.—Outline dimensioned drawing of the new 4-cylinder water-cooled 35-h.p. Anzani engine.

cranks set at 180° apart, and each crank carries two connecting-rods, one being forked to bridge the other on the journal.

Dimensions.—100 mm. by 120 mm.; weight, 83 kilogs.; h.p., 35 at 1,600 r.p.m.; price, 3,900 francs.



PARIS FLIGHT SHOW.—Outline dimensioned drawing of the 3-cylinder air-cooled 25-h.p. Anzani engine as used by M. Bleriot in the cross-Channel flight.

Anzani 25-h.p.—Air-cooled 3-cyl. semi-radial engine of the type used by M. Bleriot in the cross-Channel flight. The cylinders are separate castings, complete with heads and valve-chambers. They are ribbed circumferentially to increase the cooling surface, and are fastened to a one-piece aluminium crank-chamber of cylindrical shape. The induction-valves are atmospheric; the exhaust-valves are operated by three separate cam-shafts. The cylinder walls are perforated to exhaust to atmosphere at the end of the stroke.

All the cylinders are set in the same plane, and the pistons (steel with cast rings) are coupled up to the same crank, two of the big ends being forked. The angle between one cylinder and its neighbour is 60°, and the firing order is 1, 3, 2, taking No. 2 cylinder as being that in the centre. From No. 1 to No. 3 the firing interval is 120°, from No. 3 to No. 2 and again from No. 2 to No. 1 is 300°.

Dimensions.—105 mm. by 130 mm.; weight, 65 kilogs.; h.p., 25 at 1,600 r.p.m.; price, 3,000 francs.

FLIGHT AS A SPECTACLE.

To the general public, who in the majority of cases can hardly hope to have any intimate acquaintance with the practical side of flying, at any rate for some little while to come, the spectacular aspect of flight necessarily constitutes at the moment the most interesting feature of such demonstrations as have been taking place at Blackpool and Doncaster. It is the display rather than the competition which appeals, and in any case the man in the street is not apt to be very much concerned with an event as such unless he happens to have money on it. Such being the case, it is therefore a matter of some importance to consider the attractions of flight as a spectacle in order to judge of the influence which it may have on the support which flight meetings are likely to receive at the hands of the public after the first flush of novelty has worn off.

There is no doubt that a machine in flight is a sight affording new impressions of a vivid character. It is something which everyone ought to see, but having once watched an uneventful flight on a calm day, there is equally no doubt that there arises a desire for a stronger thrill. To see Farman circling the course at an altitude of only some ten or fifteen feet above the ground is to receive an impression of such absolute safety that the average spectator has no hesitation whatever about going away for refreshments while the flight is still in progress.

Between this and the demonstration provided by Latham, when he flew at Blackpool on Friday, October 22nd, in a wind fluctuating between fifteen and thirty miles an hour, there is an immeasurable gap. Latham's flight was probably the finest thing which it has ever been the privilege of man to witness. It was, in truth, an example of the real conquest of the air, for every instant of its duration the flight remained a battle against the elements. No steady effortless parade was this; his flyer was like a little sailing boat in a stormy sea, and required the same patient, or far greater, skill to avert disaster. Sometimes almost stationary in respect to the ground, though ploughing speedily through the air, at other times blown bodily sideways to such an extent that the pilot had to head the breeze in order to keep position, the flyer was never for two consecutive moments in the

same condition. Each instant presented some new phase, which held the spectators' gaze steadily on that frail-looking gnat-like object as it fought the wind.

Yet in time to come, when others fly like this, and the conquest of the air is about as complete as the conquest of the elements at sea, it is possible that spectators will cease to be impressed, because they will no longer realise how much it means. Then will be the day of evolutions in the air, skilful figure-making such as is practised by the accomplished skater. There has been little of this to be seen so far. The brothers Wright have attempted most, but their flights have not happened in this country. To the organisers of flight meetings this element must ever become of increasing importance, and they will be well advised to encourage this side of the art. Even at present the mere ascent and landing offer attractions from the spectacular point of view which are absent in the flight itself. One of the most interesting incidents which took place at Blackpool was Rougier's descent from a high altitude opposite the Judges' box. Standing up in his machine, the pilot appeared to be leaning the weight of his body upon the steering-wheel as he forced down the leading edge of the elevator to the limit of its travel. Quickly but steadily the machine descended, and at the last moment Rougier sat back in his seat, and drawing the steering-wheel towards him, thus tilted the elevator so that, like a bird spreading its wings, he brought the machine to earth without a shock.

There remains the question as to what is to be done with the competitors who are not certain whether they can fly at all, and who in any case are sure to be only able to fly a little way. Left to go on working away in their sheds, as they were at Blackpool, they can hardly be said to have added anything to the spectacular side of the event, yet there is no reason whatever why they should not contribute their share, as indeed they were supposed to do. Their efforts at rising, and their subsequent descents, would do much to relieve the monotony of waiting for the flight of the day, and it seems to us very desirable that the official arrangements should ensure something of this sort taking place.

GORDON-BENNETT BALLOON RACE.

At last the Swiss Aero Club have come to a final decision regarding the Gordon-Bennett Balloon Race, and have upheld their original award, so that the cup once more goes to America. Mr. Mix, in the "America II," covered the greatest distance of 1,121.11 kiloms. (697 miles), while M. Alfred Leblanc, in the "Ile de France," was second with 817.17 kiloms.

(508 miles), M. Messner, in the "Azurea," third, with 803.70 kiloms. (499 miles), and Col. Shaeck fourth, with 772.02 kiloms. (479 miles). Apparently the Club found that the descent of Mr. Mix in Bohemia, when the balloon was hauled down by the peasants, who seized the trail rope, came within the meaning of the rule, which allows of one descent *en route*.

Railways and Aeroplanes.

A LITTLE while ago, we mentioned as evidence of the fact that flight had come to stay, the fact that rates for insurance against various risks were being drawn, and yet another illustration lies in the announcement that

the attention of the Goods Managers' Conference (Classification Committee) at the Railway Clearing House, will shortly be given to the question as to whether aeroplanes should be included in the general railway classification of goods by merchandise trains.

HOW TO GLIDE.

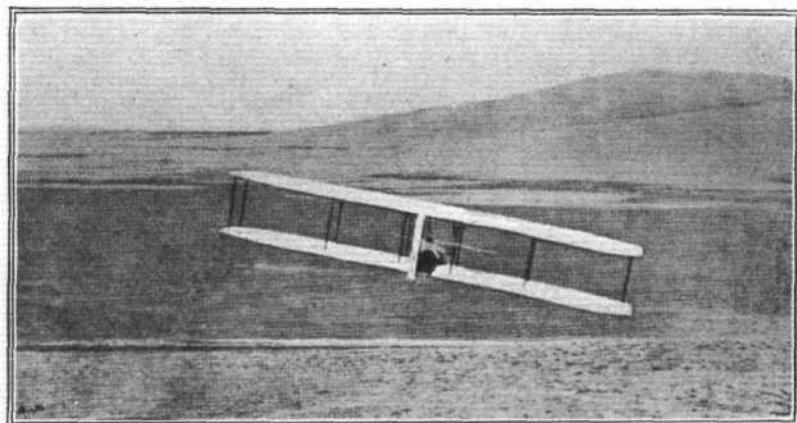
By WILBUR WRIGHT.

(Continued from page 673.)

The 1902 Model.

THE 1902 pattern was a double-deck machine having two surfaces each 32 ft. from tip to tip, and 5 ft. from front to rear. The total area of the main surfaces was about 305 sq. ft. The front rudder spread 15 sq. ft. additional, and the vertical tail about 12 sq. ft., which was subsequently reduced to 6 sq. ft. The weight was 116½ lbs. Including the operator, the total weight was from 250 to 260 lbs. It was built to withstand hard usage, and in nearly a thousand glides was injured but once. It repeatedly withstood without damage the immense strains arising from landing at full speed in a slight hollow where only the tips of the wings touched the earth, the entire weight of machine and operator being suspended between.

The practice ground at the Kill Devil hills consists of a level plain of bare sand, from which arises a group of



Turning to the right. A view from behind of the later 1902 model after it had its rear tail converted into a rudder.

detached hills or mounds formed of sand heaped up by the winds. These hills are constantly changing in height and slope, according to the direction and force of the prevailing winds. The three which we use for gliding experiments are known as the Big Hill, the Little Hill and the West Hill, and have heights of 100 ft., 30 ft. and 60 ft. respectively. In accordance with our custom of beginning operations with the greatest possible caution, we selected the Little Hill as the field of our first experiments, and began by flying the machine as a kite. The object of this was to determine whether or not it would be capable of soaring in a wind having an upward trend of a trifle over 7°, which was the slope of the hill up which the current was flowing.

How to Test a Glider.

When I speak of soaring, I mean not only that the weight of the machine is fully sustained, but also that the direction of the pressure upon the wings is such that the propelling and the retarding forces are exactly in balance; in other words, the resultant of all the pressures is exactly vertical, and therefore without any unbalanced horizontal component. A kite is soaring when the string stands exactly vertical, this showing that there is no backward pull. The phenomenon is exhibited only when the kite is flown in a rising current of air. In principle soaring is exactly equivalent to gliding, the practical difference being that in one case the wind moves with an upward

trend against a motionless surface, while in the other the surface moves with a downward trend against motionless air. The reactions are identical.

The soaring of birds consists in gliding downwards through a rising current of air which has a rate of ascent equal to the bird's relative rate of descent. Testing a gliding machine as a kite on a suitable slope, with just enough wind to sustain the machine at its most favourable angle of incidence, is one of the most satisfactory methods of determining its efficiency. In soaring, the kite must fly steadily with the string vertical or a little to the front. Merely darting up to this position for an instant is not soaring.

On trial we found that the machine would soar on the side of a hill having a slope of about 7°, whenever the wind was of proper force to keep the angle of incidence between 4° and 8°. If the wind became too strong or too

weak the ropes would incline to leeward. In one test, forming the subject of an illustration, the surfaces are inclined 4° above the horizon. Since the wind had an upward trend of 7°, the total angle of incidence was 11°, which is outside the limits specified. On steeper slopes the ropes inclined to windward quite strong. In experimenting on this plan, it is essential that a uniform slope be found which will give the air current a rising trend just sufficient to cause the kite string to stand vertical. Then both gravity and the pull on the string, which together provide the force counteracting the wind pressure on the surfaces, are applied in a single direction.

It is, therefore, not material what proportion of the total counteracting force is due to each of the several components nor even what is their total amount, because the experiments are exclusively for the purpose of determining the direction of the pressure on the surfaces by observing the direction of the reaction. When the kite string inclines to windward the slope is too steep, if to leeward not steep enough. But it is not advisable to attempt to determine how much the slope varies from the proper amount by observing the angle of the string from the vertical, for when the pull of the string differs in direction from that of gravity, it becomes necessary to know not only the angle, but also the exact amount of the pull and the proportion which it bears to the weight of the kite. It is, therefore, advisable to hunt a better slope rather than attempt to make so many observations.

A Little Adventure.

The kite experiments having shown that it ought to be possible to glide on the 7° slope, we next proceeded to try it. Although on this first day it was not considered advisable to venture upon any absolutely free flights, the machine soon demonstrated its ability to glide with this angle of descent. At a later period we made more than a hundred flights the full length of this slope and landed a short distance out on the level ground. On the second day the machine was taken to the Big Hill, and regular gliding was commenced. The wind was somewhat brisk. In one flight the wind struck the machine from the left and began lifting the left wing in a decidedly alarming manner. Owing to the fact that in the new machine changes had been made in the mechanisms operating the

rudders, so that the movements were exactly reversed, it was necessary to think a moment before proceeding to make the proper adjustment. But, meanwhile, the left wing was rising higher and higher. I therefore decided to bring the machine to the ground as quickly as possible, but in my confusion forgot the change that had been made in the front rudder, and instinctively turned it the wrong way. Almost instantly it reared up as though bent on a mad attempt to pierce the heavens. But after a moment it seemed to perceive the folly of such an undertaking, and gradually slowed up till it came almost to a stop, with the front of the machine still pointing heaven-

ward. By this time I had recovered myself and reversed the rudder to its full extent, at the same time climbing upward toward the front, so as to bring my weight to bear on the part that was too high. Under this heroic treatment the machine turned downward and soon began to gather headway again. By the time the ground was reached, it was under fair control, but as one wing touched first, it swung around in landing and came to rest with the wind blowing in from the rear. There was no unusual shock in landing, and no damage at all resulted.

(To be continued.)

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

(NOTE.—Addresses, temporary or permanent, follow in each case the names of the clubs, where communications of our readers can be addressed direct to the Secretary.)

Aeronautical Society (53, VICTORIA STREET, S.W.).

THE Council of the Aeronautical Society of Great Britain announce that it has been decided to establish an entrance fee of one guinea, and to raise the life membership subscription from ten to fifteen guineas, both alterations dating from January 1st next.

Dundee Aero Club (3, BALTIC STREET, DUNDEE).

MR. DAVID URQUHART is taking the initiative with regard to the formation of an aero club for Dundee, and he would be glad to hear from anyone in the neighbourhood who would lend their support to the project. He sees no reason why Dundee should not be to the front in this great science, and if a satisfactory response is made to his appeal a public meeting will be called to arrange for the formation of a club.

Glasgow Model Aero Club (321, DUMBARTON ROAD, PARTICK).

THE inauguration meeting of the above Club was held in Shankland's Rooms, Partick Cross, Partick, Glasgow, on Tuesday evening, October 19th, 1909, H. J. Roberts in the chair, when the following office bearers and members were appointed, viz.:—President, Mr. Jas. Brown; Vice-President, Mr. W. Smith; Committee, Messrs. Paterson, McKinnon, Cummings, Cunningham, Collins and Gilchrist; Hon. Treasurer, Mr. J. M. Burke; Hon. Secretary, Mr. H. J. Roberts; Assistant Secretary, Mr. C. P. Gibson. After some discussion on the part of those assembled, it was decided that the title of the Club should be "The Glasgow Model Aero Club." Any who are interested in the subject of aviation are cordially invited to forward their names, at the earliest possible moment, to the Hon. Sec.

Hartlepool Aero Club.

ON the 22nd inst., at a meeting held at the Station Commercial Hotel, West Hartlepool, it was decided to form an Aero Club for the Hartlepool. Mr. A. Barrett was elected Chairman, and Mr. T. Beckett, Hon. Sec. pro tem., and these gentlemen, with the Executive Committee of Messrs. T. C. Luty, E. Henderson,

B. T. Hart, H. F. Fredericks, and G. H. Hutton, were asked to draw up a general scheme for the carrying on of the Club. The Chairman offered to place a small workshop at the disposal of members.

Manchester Aero Club (9, ALBERT SQUARE, MANCHESTER).

A COURSE of six lectures has been arranged by the club, to be given by M. L. Blin Desbleds, in the Manchester School of Technology, on Tuesday evenings, from November 2nd to December 7th, the lectures commencing each evening at 7.30 p.m. The subjects of the six lectures will be: 1. Principle of the aeroplane; 2. The meaning of aspect ratio, &c.; 3. Head resistance, &c.; 4. Motive power; 5. Propellers; 6. Efficiency of construction. To members of the club the cost of tickets for the course of six lectures will be 5s., to students of the School of Technology 7s. 6d., while to all others the charge will be 10s. Tickets can be obtained from the Hon. Sec., Mr. M. Stafford Threlfall, at the above address.

Notts Aero Club (MANOR PARK, RUDDINGTON).

AN effort is being made to establish an aero club for Nottingham, and Mr. T. F. Scanlan, of Manor Park, Ruddington, will be glad to hear from those gentlemen who are interested in the matter. Should the idea be received favourably, steps will at once be taken to call a meeting to further the scheme.

S.W. England Aeronautical Soc. (51, ST. LEONARD'S RD., E. SHEEN)

THE model demonstration on Barnes Common last Sunday was postponed to a later date on account of the very high wind. The members adjourned to the aero works, Down Place, King Street, Hammersmith, where a very successful general meeting was held. A technical committee to design and build the glider was formed as follows: Messrs. F. Shaw, F. E. H. Johnson, Y. John, F. W. Gunton, and W. O. Kennington, to be instructed by Mr. R. Weichman. Many new members were elected. A lantern entertainment will be arranged for next month. Mr. Johnson was elected acting secretary in place of Mr. A. J. Fransella, who is taking a fortnight's holiday in France.

Flight! Flight! Flight!

THE cheery writer who looks out on life from the "Office Window" of the *Daily Chronicle*, has been condoling with the editor of the "New English Dictionary" for having missed the word "aviation." He, however, thinks, on the whole, it is perhaps not a very bad miss, and puts in a plea for the simpler word which was adopted as the title for this journal. His witty comments are as follows:—

"Spare a moment of pity for the famous editor of the 'New English Dictionary.' He has missed 'aviation.' And one would have liked to see his definition of the word. But the world moves even faster than dictionaries, and the *Liverpool Post* has been offering a prize for a word that is better than 'aviation.' You could hardly think of a worse word. But the suggesters have done it. For example: 'homosoaration,' 'andropetation,' 'manflyastion,' 'wingation,' are all of them worse than aviation.

"Why not—to avoid expense of talk and typesetting—put all this behind you and talk and write simply? Aviation shall be 'flight,' and the man who flies shall be a 'flier.' 'Flight' is the simple suggestion of the *Liverpool Post*. And there is really no reason why the thing—the aeroplane, the monoplane, the biplane—should

not consent to be called a 'fly.' The earthly 'fly' is too weary to object to the airy theft."

Nancy to Southwold by Balloon.

QUITE an adventurous journey did Mdle. Marvingt and M. Garnier have, as a result of a balloon trip on which they started from Nancy on Tuesday morning, intending to land in Holland. It was the first time the Frenchman had been in a balloon, but the lady was quite an experienced hand. After passing over Metz and Luxembourg the balloon rose to a height of about 8,000 ft., and travelling very fast the aeronauts soon found themselves over Holland. Then it was decided to continue the journey to England. On reaching the sea, snow and hail were encountered, and for some time the balloon dragged on, almost touching the sea. Eventually the English coast was reached at Southwold, where Mdle. Marvingt jumped out of the balloon. Relieved of her weight, it rose again, and carried M. Garnier for another two miles, when it came finally to rest in a tree. The journey of 450 miles occupied 14½ hours.

AVIATION AND AIRSHIP NEWS.



Baroness de la Roche, the First "Aviatress" of the World.—Last week the Baroness flew on a Voisin biplane for 300 metres, and afterwards twice round the Chalons Camp—a distance of about four miles.

The First Lady Flyer.

YET another sphere which some had thought man would, for some time, at any rate, retain for his own has been invaded by the gentler sex. Baroness La Roche has been successfully piloting a Voisin biplane, and has thereby earned the right to be known as the first lady flyer or "aviatress." For some time the Baroness has been taking lessons from M. Chateau, the Voisin

instructor, at Chalons, and on Friday of last week she was able to take the wheel for the first time. This initial voyage into the air was only a very short one, and *terra firma* was regained after 300 yards; but on the following day the parade ground at Chalons was encircled twice, the turnings being made with consummate ease. During this flight of about four miles there was a strong gusty wind blowing, but after the first two turnings the Baroness said that it did not bother her, as she had the machine completely under control.

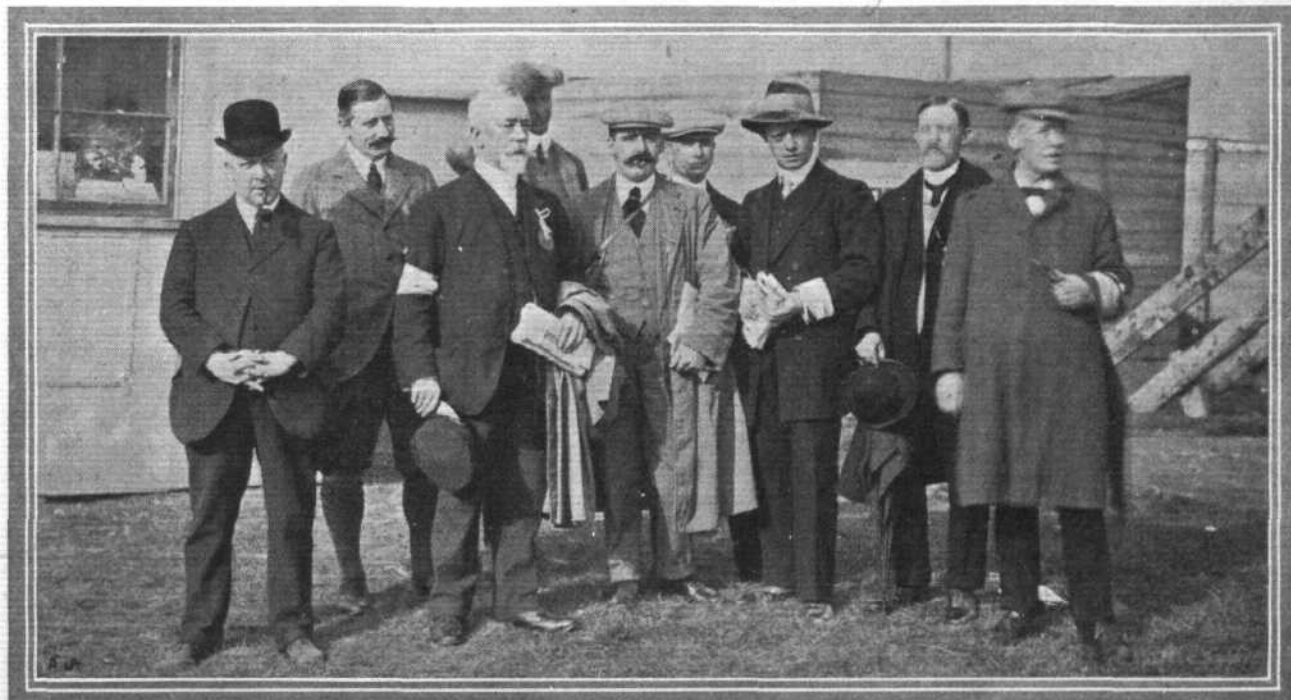
A Biplane at Clacton.

ESSEX appears to be quite strong in aspirants for flying honours. The latest is Mr. Guy Francis Laking, son of Sir Francis Laking, Physician to the King, who has had constructed locally by Messrs. Filch and Son, motor engineers, a biplane, fitted with a 12-h.p. J.A.P. engine, to be known as "Laking No. 1." The total weight, with pilot, is said to be under 4½ cwt.

M. Bleriot at Vienna.

ON Saturday last M. Bleriot gave the Viennese their first sight of a flying machine in actual use, and they turned out in force to see the demonstration, it being estimated that there were about 300,000 people assembled on the Simmering Common to see the first man who flew across the Channel. Two trips into the "central blue" were made, the first of 22½ mins. and the second of 17 mins. At the conclusion of the first flight M. and Mme. Bleriot were presented to the Austrian Emperor by M. Crozier, the French Ambassador, and His Imperial Majesty manifested great interest in the working of the machine as it was explained by M. Bleriot. After the Imperial party left the flying ground, the crowd closed in on M. Bleriot and carried him shoulder-high to his motor car. On the following day M. Bleriot left Vienna for Bucharest, to demonstrate his flyer before the King of Roumania.

Events for next 3



"Flight" Copyright Photo.

A group of the organisers of Blackpool Flight Meeting, including Alderman J. Bickerstaff, Mr. Vere Ker-Seymer, M. Georges Prade, &c.

Activity at Issy.

THE end of last week saw quite a lot of experimenting going on at Issy. M. Gabriel Voisin was trying the new Voisin model, the Olivier-Vendome and Clement-Bayard machines were undergoing practice spins, and four new owners of Bleriot monoplanes were putting their new mounts through their paces. Among the last were two men who have made their names on the cycle track—Olieslagers and Verheyen. The next day a fifth

Bleriot was under trial by its happy possessor, M. Henri Speckner, of Geneva.

London to Cologne by Zeppelin.

THE latest proposal of the Zeppelin Aerial Navigation Co. is to institute a service between London and Cologne. Under favourable conditions, it is estimated that the journey could be made in eight hours, while at present the quickest time in which it can be accomplished is thirteen hours. The service would not be regular on account of the vagaries of the weather, and as the period of eight hours is based upon the prevalence of westerly winds, it is quite likely that the voyage would often take considerably longer.

French Military Dirigibles.

CONSEQUENT upon the disaster to the "Republique," it is stated that the French military authorities are making some extensive

alterations in the design of the "Liberté" which will delay the completion of that vessel till next June. In addition to having a wooden propeller instead of a steel one, this will be surrounded by a light metal rim, which, in the event of a blade breaking, would prevent it piercing the envelope. Then the whole of the interior of the envelope will be divided by cellular partitions, which will have a very small perforation at the centre, thus allowing the gas to pass from one compartment to another in case of need, but very slowly. Thus, should one compartment be damaged, the others would be sufficiently buoyant to allow of a safe descent. When these alterations have been made, it is believed that the "Liberté" will be practically indestructible.

"Espana" Launched.

THE latest of the Lebaudy airships, the "Espana," which has been built for the Spanish military authorities, was taken out for its first trial from Meaux on Friday of last week. It was intended to fly over Paris, and then on to Rouen, but clutch trouble caused a descent to be made at Coulommiers. After the completion of repairs the airship returned to her shed, which was reached without incident.

"Zeppelin III" Improvements.

HAVING been fitted with the third motor and an additional pair of propellers, "Zeppelin III" was taken out for a speed trial on the 21st inst. As far as could be ascertained, the speed has been improved by the new arrangements to 34 miles an hour, as against 30 miles an hour, which was the best speed previously attained.

Italian Military Dirigible.

A LONG journey was made with the Italian military dirigible on the 21st inst. Leaving Bracciano, the airship was first headed for Civita Vecchia and then on to Grosseto, about 55 miles from the starting point. From there the Island of Monte Cristo, which is about 30 miles out to sea, was visited, after which the return journey was made without incident; altogether the vessel covered about 170 miles in the six and a half hours it was in the air.



"Flight" Copyright Photo.

Although many would gladly have seen more "fly" at Blackpool, Col. Bosworth, the genial Chairman of the Automobile Association, complains that he saw quite enough fly. Secretary "A.A." Stenson Cooke was fortunately handy to relieve him of the intruding "mono-plane."

CORRESPONDENCE.

* * The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

SAVE US FROM OUR "FRIENDS."

To the Editor of FLIGHT.

SIR,—In reply to your Editorial Notes in this week's FLIGHT, may I, as one who has suffered from this greatly overdone activity on the part of the Aeroplane Club, be permitted to say a few words as a warning to others, and of interest, I think, to all your readers.

It was in the early part of this summer that I received an invitation to join "The Aeroplane Club of Great Britain and Ireland," and being caught by the grandness of the title and the brilliance of the prospects so largely set forth in the syllabus, I joined, thinking that this must be "the" club of Great Britain, and not "one" of the clubs as I afterwards discovered. The subscription is not large, and is within the reach of everybody, and in consequence the membership is really a large one; and so, of course, the Club funds run to a very considerable amount, and each member might expect to get good value for his money; but in practice this is not so, and I say that members (provincial members especially) get practically nothing, except the privilege of membership, from the Club. I have kept in as close touch as possible with the Club and yet all this time the only privileges I have received have been a few letters praising the possibilities of the Club and the privileges which the members will enjoy, and I am sure that the expenses of the Club on my behalf have not in any way exceeded

1s.; so what becomes of the other 9s.? Perhaps it goes to pay for the stamped postcards, &c., and the hire of the Mansion House, &c., but I cannot say. But this I can say, that if Mr. Windham and others are making a glorious splash, it is at the sacrifice of the "Aeroplane Club," and perhaps, if it is permitted to continue, at the sacrifice of the progress of aviation in this country; and so I echo, as I hope every other true Britisher does, your thoughts so clearly set forth in this week's FLIGHT, and sincerely hope that we may band together before it is too late and save those interests for which we are all so dearly striving.

Yours faithfully,

A MEMBER OF THE AEROPLANE C.G.B. AND I.
Liverpool.

FAKED FLIGHT PHOTOGRAPHS.

To the Editor of FLIGHT.

SIR,—Really people should be warned against the wiles and dodges of the newspaper picture maker. A daily journal that is becoming popular in the North and the Midlands—and, generally speaking, deserves its success—published yesterday (October 21st) what was meant to be a photograph of the Comte de Lambert circling the Eiffel Tower. It was an excellent "upward looking" picture of the tower; but the Count's Wright was coming head-on *directly towards the camera*. He was heading downwards to destruction at an angle of about sixty degrees. Of course, the artist had gummed an ordinary facing picture of a Wright machine on to an ordinary picture of the tower taken (the latter only) from underneath.

Yours, &c.,

A. E. O.

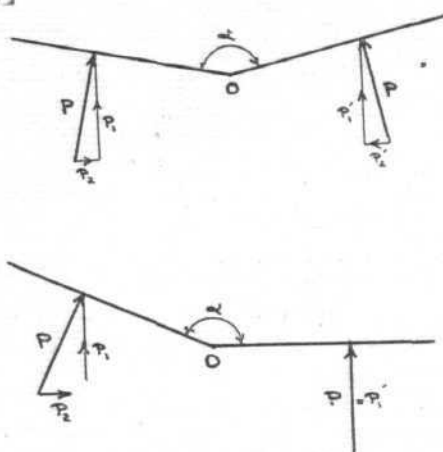
THE DIHEDRAL ANGLE.

To the Editor of FLIGHT.

SIR,—In a recent article on the Antoinette monoplane appearing in your issue of October 23rd, the writer, in speaking of the automatic stability arising from the dihedral angle of the wings on these machines, bases his explanation of the stabilising effect solely upon the righting couple produced by the alteration in magnitude of the vertical components, P_1 , of the resultant pressure, P , as the machine heels.

The effect of the horizontal component, P_2 , which is increased as the machine heels, is totally disregarded in the article.

If the effects of both forces, P_1 and P_2 , be considered, and the hypothesis, assumed by the writer, that the pressure, P , remains constant so long as the velocity of the machine through the air is unaltered, be taken as correct, it will be seen that there is no resultant righting moment, and therefore no stabilising effect produced. *[Blair]*



For, referring to the figure, the sum of the moments due to P_1 and P_2 , about the axis, O , is equal to the moment of their resultant, P , about the same axis.

This applies for both wings, and, therefore, whatever the angle of heel, the moment due to the whole pressure, P , on the one side, is always counterbalanced by an equal and opposing moment, due to the pressure on the other side of the machine.

No doubt in practice there is an automatic stability resulting from the use of the dihedral angle, since such firms as the Antoinette Co. adopt the principle, but if this is the case the article in question certainly failed to explain it.

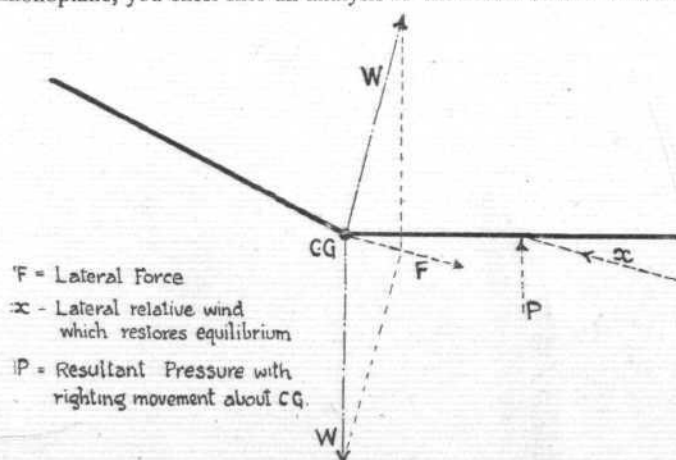
Yours truly,
L. C. KEMP.

Forest Hill.

To the Editor of FLIGHT.

SIR,—I have taken your admirable paper now for some months, and have read with interest your series of articles on successful types of aeroplanes.

In your last issue, of October 23rd, while describing the Antoinette monoplane, you enter into an analysis of the action of the dihedral



F = Lateral Force

alpha = Lateral relative wind which restores equilibrium

P = Resultant Pressure with righting movement about CG.

angle as a means of automatic stability. This analysis is surely incorrect, for a moment's glance at your second figure will show that there is no resultant moment tending to right the machine.

A more plausible explanation seems to me to be as follows:—

In whatever position (laterally) the machine is moving in still air, the resultant pressure is W (the weight) upwards in a direction bisecting the dihedral angle. This and W (the weight), vertically

downwards through the centre of gravity, have in a tilted position a resultant small force, F , in the direction of the lower wing.

The effect of F is to move the machine laterally downwards. The resulting lateral wind on the lower wing tends to raise it (the wing) to its normal position.

May I enclose a diagram to make myself clearer?

Trusting I have not trespassed on your space,

I am, yours truly,

Birmingham.

MAURICE OLLEY.

[In the above note Mr. Kemp looks upon the problem of the dihedral angle as analogous to that of a bell-crank-lever pivoted upon a fixed point, O . For such a case it is true that there is no restoring couple, but in a flying machine the point, O , is not fixed; on the contrary, it is one of the forces acting, being by hypothesis the position of the centre of gravity. The restoring couple is formed by gravity acting about some point representing the centre of pressure on the lower wing. The centre of gravity moves laterally, as pointed out by Mr. Olley, but the restoration of equilibrium is effected by an accompanying descent of the centre of gravity through space.—ED.]

METAL VERSUS WOODEN PROPELLERS.

To the Editor of FLIGHT.

SIR,—While quite agreeing with Mr. Rogers as to the superiority of metallic (all steel) propellers over wooden ones, I must take exception to his claim that any propeller other than the "Hollands" is "infinitely superior to any on the market that have yet been tried."

I also object to Mr. Cochrane's assertion that his propeller "will stand a greater breaking strain and give a greater thrust than any other propeller on the market."

Now, as I know by repeated complete tests what the "Hollands" propeller will do and stand I am fully warranted in claiming those vital qualities for the "Hollands" propeller.

Mr. Cochrane must remember too that I have challenged him to a contest between large propellers of each type. I now repeat it, and also protest against this further advertised assertion that he "has challenged and beaten all comers."

Speaking of challenges, let me mention that I am still awaiting a notification from Mr. Handley Page, whom I challenged in July last (issue of 24th), and who stated that he would have a monoplane ready for the contest in three or four weeks thence.

Yours faithfully,

Oct. 25th, 1909.

SIDNEY H. HOLLANDS.

[Feeling that no further useful purpose can be served by this and similar correspondence between designers and makers of propellers—the advertising columns being the proper place for statements such as those referred to above—no further letters of this nature can be published.—ED.]

LOAN OF MODELS WANTED.

To the Editor of FLIGHT.

SIR,—I am to lecture on November 9th, 1909, for the Erith Literary and Scientific Society on "Flying Machines." I had hoped to be able to show a number of representative models other than those of my own monoplane. I have, however, found it very difficult to procure these models, and should esteem it a very great courtesy if any of your readers could assist me by lending some. I would, of course, pay any expenses attached, and guarantee their return in perfect condition.

It would facilitate my work if lenders would permit me to mention their names as the designers or makers of any models in question.

Yours truly,

Belvedere, Kent.

ALEXANDER THIERSCH.

BRITISH FLYING GROUNDS.

To the Editor of FLIGHT.

SIR,—I have no doubt the two "Flying Weeks" that have just taken place at Doncaster and Blackpool have been a great success as far as "the gate" is concerned, but it seems to me that so far as aviation is concerned they have only served to impress more deeply upon the country the fact that England is terribly far behind France and America. During the entire period, at neither of these two meetings, did a single English machine leave the ground with any success, and some even came in for a considerable amount of ridicule. Of course, I do not include Mr. Cody in this category.

In my opinion, the key to the whole situation lies in the fact that there is not at present a single really good aviation ground in the whole of England.

Let me explain what, from my experience, I think is absolutely necessary for us to have in the way of a ground before English aviation can be successfully carried out.

Firstly.—The ground itself should, if possible, be two miles square, or at the very least, one mile square.

Secondly.—The surface should be not worse than a fairly rough football ground, and the entire ground should be as flat as possible, and with no ditches or obstacles, such as fences, &c.

Thirdly.—Absolute privacy should be obtained—anyhow, the right to turn people off—as nothing is more trying than to have a lot of people asking silly questions, and poking sticks and umbrellas through the planes (by no means an unusual occurrence, I assure you).

These, I think, are the main requirements of a good aerodrome—and such an aerodrome would do more for English aviation than all the prizes in the world. For, with that space at his command, the beginner could experiment with a minimum of risk, and the older hand could attempt trials under circumstances that would make it quite impossible for him to even take out his machine on a small and narrow ground.

Yours faithfully,
MALCOLM SETON-KARR.

MODELS AT BLERIOT BANQUET.

To the Editor of FLIGHT.

SIR,—We notice a letter in to-day's issue of FLIGHT from Messrs. Clarke and Co. inferring that their model which "was given the place of honour" was the *only* Bleriot model lent for exhibition at the Bleriot dinner.

At the time we notified you that we were sending models to the Bleriot dinner, but we were not aware that other models were being shown.

The two models we exhibited were, one scale model of the Bleriot machine made by us, and the other an original model of the Farman machine, actually made to scale by Mr. Farman himself, three years ago, and it was from this model that his full-sized biplane was made. These were hung next to Messrs. Clarke's model at the dinner, and at present are on exhibition at our showrooms here in Piccadilly.

We remain, yours faithfully,
THE MOTOR SUPPLY CO., LTD.
JNO. W. BROWN, Managing Director.



FINANCING THE DONCASTER MEETING.

IN the Chancery Division on Friday of last week, before Mr. Justice Swinfen Eady, Mr. Macnaghten, K.C., moved, on behalf of Mr. Caspar, to discharge the order made for the appointment of a receiver in respect of the proceeds of the aviation meeting at Doncaster.

His Lordship pointed out that it would be irregular to move to discharge the order.

Mr. Russell, K.C., mentioned that he had a motion he desired to bring on, and if his contention was right his friend's motion was useless.

Mr. Barlow explained that he appeared for Mr. Reichel, the sporting editor of the *Figaro*, who really made all the arrangements with the French aviators in France. There was some question as to whether he was served at Doncaster, but he came up to town on Wednesday, and consulted his legal advisers on Thursday. Until then he did not understand the position of affairs, and had had no time to prepare his answer.

His Lordship: What is the financial position? Is there any money to be handed over by anybody to anyone else?

Mr. Russell: The money will pass through the hands of the town clerk, and it is in his hands now.

Mr. Macnaghten: We are in touch with the town clerk, and I am told that nothing will be paid during the next week, as the accounts will not be settled. The Corporation gave a guarantee of £5,000, and the meeting was carried on under that. The town clerk received the money, and what he received was to be handed to the receiver.

His Lordship: There was something with regard to a syndicate of French gentlemen.

Mr. Russell: An association of French sportsmen.

Mr. Macnaghten: They have not materialised in this court yet.

His Lordship: With whom is the agreement with the town clerk?

Mr. Barlow: With Mr. Caspar and Mr. Reichel.

His Lordship: And at present neither has disclosed any principal behind him?

Mr. Russell: Not by name.

Both motions were allowed to stand over for a week, it being agreed in the meantime to continue the receiver.

PUBLICATIONS RECEIVED.

Catalogues.

Fabrics and Accessories. Handley Page, Ltd., 72, Victoria Street, Westminster, S.W.

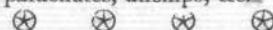


NEW COMPANIES REGISTERED.

Lancashire Aero Club, Ltd., Blackpool.—Capital £10,000, in 9,950 shares of £1 each and 1,000 deferred shares of 1s. each.

Private Companies.

Gaudron, Ltd.—Capital £300, in £1 shares. Aeronauts, dealers in balloons, parachutes, airships, &c.



Aeronautical Patents Published.

Applied for in 1908.

Published October 21st, 1909.

- 20,038. SIR H. S. MAXIM. Flying machines.
22,384. F. E. BARON AND OTHERS. Aerial machines.
Published October 28th, 1909.

- 20,916. J. E. HUMPHREY. Propulsion of flying machines.
24,928. A. TACQUIN. Aerial machines.
26,567. C. BRAUN. Lightning conductor for air-ships of all kinds.

Applied for in 1909.

Published October 21st, 1909.

- 7,349. E. ROCHE. Mono-aeroplane.
9,607. J. MEANS. Signalling systems for aerial machines.
18,037. J. SEILER. Aeroplanes.

BACK NUMBERS OF "FLIGHT."

SEVERAL back numbers are now becoming **very scarce**, and when exhausted no more complete sets will be procurable.

The publishers have pleasure in announcing that they have secured a few of these back issues of FLIGHT, and any of our new readers who may wish for sets, No. 1 to date, except Nos. 3, 4, 12, 15, and 16, but including the numbers containing full description and Scale Drawings of the Bleriot, the Curtiss, Voisin, and Cody biplanes, the Wright full-size glider, and of Santos Dumont's "Demoiselle" monoplane; can obtain same for 6s. 3d., post free (abroad 7s. 10d.).

Complete sets to date, including all the above and in addition the scarce higher-price numbers: Nos. 3, 1s. 6d.; 4, 1s. 6d.; 12, 1s. 6d.; 15, 1s.; and 31 (with scale drawings of the Bleriot cross-Channel flyer, 2s.), but exclusive of No. 16, which is now obtainable in bound volumes only at the end of the year, and is otherwise out of print, can be obtained for 12s. 6d., post free (abroad 14s. 4d.) from the Publishers, 44, St. Martin's Lane, W.C.

The publishers have only a limited reserve stock for bound volumes at end of year. Those wishing, therefore, to ensure obtaining Volume I complete, with Index and Title Page, can book same now at the price of One Guinea, bound in cloth boards. Orders will be booked for these in rotation as received. *As various numbers become scarce* the price will be raised accordingly.

Bleriot Number separately, 2s.

FLIGHT.

44, ST. MARTIN'S LANE, LONDON, W.C.

Telegraphic address: Truditur, London. Telephone: 1828 Gerrard.

SUBSCRIPTION RATES.

FLIGHT will be forwarded, post free, to any part of the world at the following rates:—

UNITED KINGDOM.			ABROAD.		
	s.	d.		s.	d.
3 Months, Post Free ...	1	8	3 Months, Post Free ...	2	6
6 " " " ...	3	3	6 " " " ...	5	0
12 " " " ...	6	6	12 " " " ...	10	0

Cheques and Post Office Orders should be made payable to the Proprietors of FLIGHT, 44, St. Martin's Lane, W.C., and crossed London and County Bank; otherwise no responsibility will be accepted. Should any difficulty be experienced in procuring FLIGHT from local newsvendors, intending readers can obtain each issue direct from the Publishing Office, by forwarding remittance as above.